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THE RÔLE OF PHYSICAL THERAPY IN THE TREATMENT OF PRECANCEROUS AND CANCEROUS DERMATOSES

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NEW YORK

Physical agents in one form or another, singly or combined, play practically the entire rôle in the treatment of precancerous and cancerous skin lesions. The dermatologist is quite fortunate in the vast array of physical agents at his disposal.

One may choose from the following according to the type and size of the various lesions:

1. Radium.
2. Roentgen rays.
3. Grenz rays.
4. High frequency:
   (*a*) Cutting current.
   (*b*) Electrodesiccation.
   (*c*) Electrocoagulation.
5. Electrocautery.
6. Actual cautery.
7. Electrolysis.
8. Carbon dioxide snow.
9. Curet.
10. Scalpel.

The well trained therapist is not a faddist. He should individualize in every case and be prepared to use the ideal physical agent or combination of physical agents for the case in question. By means of different physical methods or their combinations, one may arrive at the same result. This is only a matter of personal experience and technic.

A list of the various lesions treated by physical agents is given in the accompanying tabulation.

Dermatoses

Precancerous	*Cancerous*
1. Senile keratoses	1. Basal cell epithelioma
2. Seborrheic keratoses	2. Prickle cell epithelioma
3. Kraurosis vulvae	3. Basal squamous cell epithelioma
4. Moles	4. Transitional cell epidermoid carcinoma
5. Radiodermatitis	5. Melanocarcinoma
6. Leukoplakia	6. Paget's disease of nipple
7. Syphilis (certain lesions)	7. Bowen's disease (intra-epidermal carcinoma)
8. Occupational keratoderma (tar, pitch, arsenic, dust)	8. Sarcoma (*a*) Fibrosarcoma (*b*) Spindle cell sarcoma (*c*) Giant cell sarcoma (*d*) Neurogenic sarcoma (*e*) Dermatofibrosarcoma (*f*) Melanosarcoma (*g*) Lymphosarcoma
9. Lupus vulgaris and tuberculosis cutis	
10. Lupus erythematosus	
11. Arsenical keratoses	
12. Chronic ulcers	
13. Cicatrices	
14. Papilloma of tongue	
15. Cutaneous horns	

PRECANCEROUS LESIONS

1. *Senile Keratoses.*—Hazen has estimated that about 5 per cent of the cases of senile keratoses undergo epitheliomatous transformation. Williams and others think this percentage is high. The lesion may either ulcerate superficially or enlarge and become elevated. With the appearance of an inflammatory border one should immediately suspect a malignant growth. The condition is especially dangerous when it occurs on the mucous surface of the lips. Electrodesiccation is an excellent method of treatment. By the surface applications of the monopolar current the lesion and a small margin of normal skin are desiccated. Following removal of the desiccated tissue with a curet, the current is applied to the bed of the wound. It is well to follow this treatment with roentgen rays.

2. *Seborrheic Keratoses.*—This type is the most common of the keratoses. The lesions occur especially on the chest, on the intrascapular region, about the waistline and on the face. They are sharply circumscribed, rounded or oval, varying in size from a pinhead to a quarter (25 mm.) and covered with greasy, friable scales, which may be gray, yellow, brown or black. The seborrheic keratoses, when they become malignant, give rise usually to the basal cell epithelioma. Treatment of this condition depends on the characteristics and location of the lesion. Electrodesiccation is an excellent therapeutic method. When the lesion is located on the face, the cosmetic factor should be considered. When a slight scar is immaterial, the surface of the lesion and a small periphery of normal skin may be desiccated. If there is infiltration, the lesion should be curetted and followed by electrodesiccation. Other satisfactory methods of treatment are electrolysis, the actual cautery and carbon dioxide snow.

3. *Kraurosis Vulvae.*—The condition was defined by Briesky in 1885 as "retraction of the tissues of the female external genitalia with whitening of the integument"—more accurately, an atrophic, sclerosed condition of the skin of the vestibule, labia minora, frenulum and prepuce. The condition is regarded as a precursor of malignancy.

Treatment consists in a partial or complete vulvectomy followed by plastic work necessary for good genital drainage. Irradiation is contraindicated.

4. *Moles.*—In this category are included malignant lentigo and melanotic whitlow. Any mole may be the site of malignant change. However, only certain clinical types may develop into melanocarcinomas. This type is usually bluish black or slate black and may be flat or slightly raised. As a rule, it is nonhairy. Both the pigmented and the nonpigmented cells are of ectodermal origin in the premalignant mole. The so-called benign types of moles when hairy should have the hairs destroyed by electrolysis. The mole frequently disappears without further treatment. If not, one may resort to carbon dioxide snow, trichloracetic acid or electrodesiccation. Roentgen rays should not be used in removing hairs, since subsequent treatments result in scarring.

The slate black moles are always a potential source of danger. Serious consideration is required before

therapy is instituted. If they are not subject to constant irritation and if they do not show signs of growth, it is safer to leave this type untouched. If there is evidence of malignant change, radical excision with the endotherm knife should be considered. It is best to extend well beyond the margin (three-fourths inch) of the growth and down to the underlying muscle. (The endotherm knife is the method of choice, since the sealing of the lymphatics and capillaries is accomplished while cutting—thus minimizing the possibility of metastases). One day later, radium is applied to the form of element or emanation heavily filtered to the original site of the lesion, to the surrounding area from 2 to 3 inches in diameter and also to the glands that drain the area. Some cancer therapists prefer to use radium alone for the treatment of melanomas and they report a fair number of satisfactory results. If this method is used, gamma rays in sharp doses including an area beyond the lesion should be given.

5. *Radiodermatitis.*—This condition may be produced either by one massive overdose or by the cumulative effect of repeated small doses of roentgen rays or radium. The sequelae may appear in the following order: pigmentation, telangiectasia, keratoses, ulceration and, in occasional cases, carcinoma, which develop in the ulcer bed. Some dermatologists use roentgen rays or radium in the treatment of this condition. This is not good therapy. The treatment of choice is removal by some form of surgery. Keratoses should be destroyed by some form of high frequency current, preferably electrocoagulation. If the area is large, removal should be followed in due time by skin grafting.

6. *Leukoplakia.*—Advanced cases of leukoplakia have been frequently followed by malignancy. The condition presents itself as white patches on the tongue, oral and genital mucosae. When these begin to fissure or show signs of inflammation, malignancy should be suspected. The small lesions may be destroyed with the actual cautery or by means of electrodesiccation. Leukoplakia may recur under this treatment. This, however, is less likely to happen if strict attention is paid to prophylaxis.

Radium, roentgen rays, carbon dioxide snow, chemical caustics and electrolysis should be condemned for the treatment of this condition.

7. *Syphilis.*—The important factor in the treatment of syphilis is, of course, antisyphilitic therapy. Certain types of tertiary syphilitic manifestations, however, predispose to malignancy. These may be in the form of gummas, interstitial glossitis and leukoplakia. In addition, malignant tumors frequently develop in scars from previous syphilitic ulcerations in the mouth. All infiltrated ulcerations should be looked on with suspicion. Too often, the physician is misled in the diagnosis of carcinoma because of a positive serologic reaction. All persistent ulcerations of the mucous membrane should be studied grossly and microscopically to determine the possibility of malignancy so that physical agents may be instituted at once. Preferably, in cases in which a malignant condition is found, I resort to electrocautery or scalpel followed by roentgen rays, radium or both. These agents will be considered later under the treatment of oral carcinomas.

8. *Occupational Keratoderma.*—The malignant growths that occasionally follow occupational exposure to various chemicals are usually of the prickle cell type and are invariably preceded by keratoses. Among these irritants may be mentioned tar, pitch, arsenic, dust, oil and heat. The discrete lesions are treated in the same manner as senile keratoses—by electrodesiccation.

9. *Lupus Vulgaris and Tuberculosis Cutis.*—Carcinoma due to lupus vulgaris usually begins in the scar or lesion of many years' duration. There has been much controversy in regard to the use of roentgen rays and radium in the treatment of lupus vulgaris. Some state that roentgen rays within safe limits may precipitate malignancy; others, that a malignant growth results only as a result of overdoses administered either massively or fractionally.

The treatment of lupus vulgaris consists in destroying the discrete nodules by electrodesiccation. The actual cautery and electrolysis may also be employed. Superficial nodules are dehydrated by the application of a strong current to the surface for half a minute.

Electrodesiccation is the method of choice in the treatment of tuberculosis cutis.

10. *Lupus Erythematosus.*—Carcinoma in this condition is much less frequent than in lupus vulgaris and usually occurs in untreated cases.

(*a*) Discoid Varieties: The early lesions are from pea to bean sized. They do not fade under pressure and are covered with a greasy adherent scale. The primary lesion enlarges peripherally and may become the size of the palm of a hand or larger. Its border is red, firm to the touch and elevated. The treatment of this type consists in application of carbon dioxide snow. (Roentgen and radium therapy are contraindicated). In addition, I use gold solution intravenously and locally.

(*b*) Disseminated Type: This is an acute condition usually occurring in patients who have discoid patches. Lotio alba is applied in this condition. When response to this treatment is unfavorable, carbon dioxide snow is used. Treatment with ultraviolet radiation from an air cooled or a water-cooled quartz mercury vapor arc lamp is practically valueless and may cause an exacerbation.

11. *Arsenical Keratoses.*—This condition presents itself after the long continued internal use of arsenic. Sixty cases of carcinoma following arsenical keratoses are reported in the literature (there are many unreported). The deep lesions on the palms and soles are treated expectantly, and the patient is kept under observation. Discrete lesions are treated by means of electrodesiccation.

12. *Chronic Ulcers.*—Under this heading are included ulcers due to varicosities, pellagra, fistulas and the like. Malignant change in these cases is rare. Many cases are ameliorated by erythema doses of ultraviolet radiation or daily treatment with graduated doses of solar radiation or artificial ultraviolet rays.

13. *Cicatrices.*—Excluding scars of lupus vulgaris, syphilis and lupus erythematosus, the occurrence of cancer in old scars is infrequent. Large scars resulting from third degree burns are most likely to develop carcinomas. Irradiation with erythema doses is advised. Treatments are not repeated until all evidence of reaction has disappeared. This will cause an increase in circulation with resultant absorption of scar tissue. Roentgen rays and radium are used. Occasionally mild cases may be improved by frequent applications of galvanic currents. Massage is beneficial.

14. *Papilloma of the Tongue.*—This condition is common and appears at all ages. It is usually located on the dorsum of the tongue. The papillomas may be single or multiple, and histologically they resemble the

common wart. There is a tendency toward malignant change, which is indicated by fixation, growth and ulceration.

Electrodesiccation is the treatment of choice in this condition.

15. *Cutaneous Horns.*—These are peculiar horny growths which are characterized by excessive and progressive keratoses. These are most frequently found on the face and scalp and less often on the buttocks, penis, scrotum and nails. Owing to irritation due to movement, the warty base may assume malignant change. The treatment consists of removal of the horn surgically and the subsequent desiccation of the base.

CANCEROUS

1. *Basal Cell Epithelioma.*—This type of malignancy may develop in a seborrheic keratosis. The incidence is greatest in patients past 40. The lesions may occur on any part of the skin. They may be superficial or deep, nodular or ulcerating. Eighty per cent of the lesions occur about the head and neck. The majority of the lesions can be permanently eradicated if adequate therapy is begun early. After there has been invasion of bone and cartilage, the condition is much more resistant to treatment, and intensive treatment is required.

There are various types of therapy to be employed in the treatment of this condition. A large number of these lesions have responded satisfactorily to roentgen treatment in our clinic during the past fifteen years. The use of radium has rendered results that were equally good.

In several cases in which roentgen rays had failed, radium was used with good results. Radium has a distinct advantage in the treatment of lesions in certain locations, such as the inner canthus of the eye and the alae of the nose. Roentgen rays, on the other hand, are more available and less expensive.

I have used from three to four skin units of the unfiltered x-rays, repeating this two weeks after all reaction has subsided (from six to eight weeks). Usually only two such treatments were necessary. The radiation is preceded by electrocoagulation, which is employed to destroy the larger lesions. Electrothermic methods also seem to be an important factor in preventing recurrences and decreasing the amount of radiation necessary.

When the ear or nose is involved, the lesions are destroyed by electrocoagulation or excised with a high frequency knife. This is followed by two skin units of unfiltered x-rays or an equivalent dosage of radium. Lesions of the eyelid without conjunctival involvement are treated with x-rays or radium. (Ear lesions do not respond satisfactorily to radiation therapy alone.)

When radium element or radon is used, the dosage is from 40 to 50 mg. hours per square centimeter for the small superficial lesions and from 60 to 80 mg. hours per square centimeter for deeper lesions.

2. *Prickle Cell Epitheliomas.*—This lesion is more serious than the basal cell type because of its more rapid growth, its greater tendency to metastasize and its greater resistance to therapy. This type may follow senile, arsenical and tar keratoses, smokers' patches and other types of leukoplakia. They may occur anywhere on the body.

Treatment varies as to location and character of the lesion. I find it desirable to remove the lesion by electrocoagulation and follow this by radium therapy, using intensive gamma rays. When the glands are involved, surgery is resorted to in chosen cases. When glandular involvement is not apparent, it is best to administer prophylactic exposures of roentgen rays.

Radium may be used with satisfactory results. The required dosages are given over a period of from four to eight days, equal time being given each day over this period after the method of Regaud. Continuous treatment with large doses for several days has been proved quite satisfactory.

In some cases, the implantation of gold radon seeds into the tumor has been successful, 133 millicurie hours to the cubic centimeter being given.

Inner canthal lesions of the eye are best treated by electrocoagulation followed by radium therapy.

Lip lesions respond well to electrothermic methods followed by radiotherapy. From 80 to 100 mg. hours per square centimeter through a filter of 2 mm. of brass is used. The area to be treated should include 5 mm. of tissue beyond the lesion. Deeply infiltrated lesions are treated as described, followed by the implantation of from 1 to 1.5 millicurie gold radon seeds, one seed being used for every cubic centimeter of tissue treated. Then prophylactic erythema doses are administered to the lymphatics draining the involved area.

Lesions involving the tongue, floor of the mouth and buccal mucosa should each receive special consideration, since they differ widely in regard to malignancy and radiosensitivity. Metastases are greater from the tongue and floor of the mouth than from the lip, and the glands involved are deeper. Tongue lesions are best treated by using 1 or 2 millicurie gold seeds, placing one seed to each cubic centimeter in and around the tumor area and from four to six such seeds in the base of the tongue, thus blocking the draining lymphatics. Quick uses gold seeds interstitially and radon for external radiation, following this with high voltage roentgen rays.

Penile epitheliomas are usually of the prickle cell type and respond well to roentgen rays and radium in early cases. When infiltration is deep, extending past Buck's fascia, amputation of the organs by electrothermic methods is advisable. Prophylactic roentgen therapy is given to the inguinal glands.

Epitheliomas of the vulva are treated by excision with the high frequency knife, followed by the implantation of radon seeds. Prophylactic rays are given to the groin.

3. *Basal-Squamous Cell Epithelioma.*—This represents the transitional type occurring between basal and squamous cell epitheliomas.

Treatment consists in wide excision by electrothermic methods, followed by radiotherapy; or large doses of irradiation alone may be used successfully.

It should be remembered that this type is prone to metastasis.

4. *Transitional Cell Epidermoid Carcinoma.*—This type occurs most commonly on the tonsil, the base of the tongue and the nares. It is subject to early metastasis. However, it responds rapidly to irradiation. The lesion is flat and finely granular, possessing a velvety surface.

The first sign of the disease is often swelling of the neck, since the primary lesion is frequently small and inconspicuous.

Early radiotherapy is the treatment of choice, since this type possesses a marked radiosensitivity. Gold radon seeds may be implanted into the primary lesion. High voltage roentgen rays and radium should be applied to the metastatic lymph nodes.

5. *Melanocarcinoma.*—This is the type that has its origin in the slate colored, blue or bluish black moles. It is highly malignant. The prognosis is always serious and, even with treatment, uncertain, since infiltrating tumor cells are often found inches away from the primary lesion.

The treatment should be wide excision with the high frequency knife followed by electrocoagulation. Irradiation should follow this procedure.

6. *Paget's Disease of the Nipple.*—This condition begins as a mild eczematoid condition, which may spread over the areola and entire breast. Later it becomes ulcerated. Paget's disease should be considered carcinomatous and symptomatic of deeper carcinoma of the breast. Pathologic investigation in these cases reveals malignant changes within the ducts.

Treatment is radical, consisting in total mastectomy followed by irradiation. Irradiation alone is unsatisfactory.

7. *Bowen's Disease.*—Although this condition is considered by some as a precancerous condition, it is in reality a histologic entity which should be classified as an intra-epidermal carcinoma. The lesion either remains in the epidermis indefinitely or breaks through the corium, becoming a prickle cell carcinoma.

Early surgical removal by the high frequency knife is advisable. Large doses of roentgen rays and radium are required, since this type is very resistant to radiotherapy. Sharp erythema doses of grenz rays have been administered in some of my cases with success.

8. *Primary Sarcoma of the Skin.*—This condition is uncommon. There is considerable variation as to the type, structure, malignancy and response to radiotherapy.

(*a*) The fibrosarcoma is best treated by wide surgical excision, since it responds poorly to radiotherapy.

(*b*) The spindle cell type may be composed mostly of cells or mostly of stroma. The cellular types are treated with roentgen rays and radium; the fibrous types, by surgical excision preceded and followed by irradiation.

(*c*) The giant cell type responds readily to roentgen rays and radium.

(*d*) Neurogenic sarcomas arise on the extremities, abdomen and chest wall as small movable structures. Radical excision followed by irradiation has rendered the best results.

(*e*) Dermatofibrosarcomas are acellular spindle types slow to metastasize. Wide surgical excision is advised, since this type is radioresistant.

(*f*) Melanosarcomas, which arise from pigmented lesions in the cutis, are treated the same as melanocarcinoma.

(*g*) Lymphosarcomas usually arise in a chain of lymph glands. They may arise from any lymphatic tissues. Radiotherapy is most satisfactory in the treatment of this condition. When the mass is unusually hard or the condition is recognized early, surgery and combined radiotherapy give the best results.

SUMMARY

It has been shown that there are some thirty or more different cancerous and precancerous lesions, which are treated by various physical agents. Although there are about ten different physical agents at our disposal, the method used depends on the character of the lesions and their location.

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RADIUM THERAPY IN CARCINOMA OF THE LIP

EDMUND KELLY, M.D.

BALTIMORE

Dr. William Halsted once remarked that it would be a great day for surgery when all malignant disease was removed from its field of operation. That day bids fair to be at hand for certain groups of carcinoma, notably carcinomas of the lip, in which radium therapy stands preeminently as the method of choice.

This paper offers for analysis records of the Howard A. Kelly Hospital for the years 1913-1931, during which period 535 patients suffering from carcinoma of the lip presented themselves. It is interesting to note here that the first of these patients, treated in July, 1913, was entirely well when last seen in 1918. I have taken as representative of the success of irradiation those cases treated during the years 1921-1929, inclusive. The material previous to 1921 has not been included for two reasons: first, because nearly all cases referred to this hospital prior to that time were those that had been rejected by surgeons on account of massive glandular enlargement, and, second, because the technic and dosage of radium therapy were at that time still in the experimental stage. Since 1921, an increasing proportion of patients has been referred for radium in whom the lesion was still localized or the glandular enlargement moderate; also, since that year a more standardized method of application and calculation of dosage has been established.

In this analysis great care has been taken to include only those lesions which were diagnosed true carcinoma and which involved the vermilion epithelium of the lip. All lesions diagnosed keratosis, leukoplakia, wart and precancerous keratosis or tuberculous or syphilitic lesions have been excluded. Diagnosis in every case was made by a man experienced in carcinoma of the lip. Wassermann tests were taken as a routine to exclude the possibility of confusion with syphilis. Biopsies were not made as a routine because of the extreme danger of provoking metastasis; however, in doubtful cases a biopsy can be safely made immediately after irradiation. No case in which a chronic ulceration had been present less than four months was diagnosed epithelioma.

TABLE 1.—*Classification*

	Lower Lip	Upper Lip	Male	Female	Total
Number (1921-1929).....	241	11	235	17	252
Percentage.....	95.54	4.36	93.25	6.75	100

A few general facts about all cases (1921-1929) are of interest. Over 96 per cent were in the lower lip and over 93 per cent in men.

Of the cases of carcinoma of the upper lip, eight of the eleven were in women, three in men. This large percentage of occurrence in men and in the lower lip would bear out the contention that pipe and cigar smoking are etiologic factors in carcinoma of the lip; though accurate figures are not available on the incidence of smoking in this study, a large majority of the patients were cigar or pipe smokers, though by no means all, the proportion of smokers to nonsmokers being approximately 86 to 14. Exposure to weather and intense sunlight was evidently an equally large factor, as approximately

70 per cent of the cases were among farmers, sailors, soldiers and other outdoor workers. A history of direct injury to the site of the lesion was elicited in only eight cases, 4.85 per cent. It is also a striking fact that though a great many carcinomas are seen in Negroes, not a single carcinoma of the lip, of the 535 reported, was in a member of that race. Only 4.6 per cent of the cases were associated with a positive Wassermann reaction; none with clinical syphilis.

TABLE 2.—*Age Incidence*

20-29	30-39	40-49	50-59	60-69	70-79	80+
5	19	50	55	68	37	7

Age not recorded	11
Age of youngest	21 years
Age of oldest	86 years
Average age of whole group	56.8 years

TABLE 3.—*Incidence in Groups*

	Number of Cases	Per Cent
Group 1	151	59.95
Group 2	13	5.16
Group 3	36	14.28
Group 4	52	20.61
Total	252	100.00

The age incidence (1921-1929) is shown in table 2.

Taking for analysis the 252 cases seen from 1921 to 1929, inclusive, patients were divided into four groups, according to the extent of the involvement of the disease:

GROUP 1.—Lesions involving not more than one half of the lip, with no palpable glandular enlargement on first examination. This group consists of those which should nearly all be curable with any efficient treatment.

GROUP 2.—Lesions involving more than one half of the lip or extending out of sight inside the buccal cavity; no palpable glandular enlargement on first examination. This group consists of those in which operation would have been practically out of the question.

GROUP 3.—Those with definite glandular enlargement.

GROUP 4.—Cases in which radium and surgery were combined, or those in which previous radium, roentgen or surgical treatment had been given elsewhere.

This paper is primarily concerned with patients constituting group 1. Every case in this group was well within the limits of complete extirpation of the diseased area by surgery and should therefore be considered curable, whatever type of therapy was employed. Of the 151 cases 10 must be deducted as untraceable in January, 1932. The difficulty at this clinic of tracing patients with carcinoma of the lip is due to several factors: The majority come from long distances, out of the state, and change addresses without our knowledge; a large number are sailors or soldiers without permanent domicile; but, chiefly, the patient can see for himself that his lip is well, differing from internal growths, and feels no necessity for keeping in touch with us or his local physician. All those put down as untraceable in January, 1932, were followed for a period of months or years and, when last seen, had no evidence of recurrence, but they are not included in the tabulation. On the other hand, all untraceable patients who had a lingering or recurrent growth when last seen are included in the table as dead of carcinoma; this, of course, tends to cause a slight error in statistics in favor of the failures as against the successes of radium. It will also be noted that the average age of incidence of the disease (56.8 years) is almost identical with the average span of life, so that longevity of the patient following treatment is in many cases interrupted by death due to some intercurrent disease. I have also deducted four patients who died of intercurrent disease with the lip apparently well before two years had elapsed after radium treatment.

There remain, then, for analysis 137 cases in group 1, of which all were treated more than two years ago (1921-1929), 82 more than five years ago (1921-1926) and 13 more than ten years ago (1921). Of the total number treated from two to ten years ago, ninety-seven (70.8 per cent) were living and well without recurrence of the disease in January, 1932. Tables 4 and 5 show that 128 patients (93.4 per cent) in group 1 (1921-1929) were living and well two years or longer after treatment. Taking only those cases in which five years has elapsed since treatment (1921-1926), sixty-seven (81.8 per cent) of the eighty-two patients were living and well five years or longer. Of the thirteen patients treated more than ten years ago, eight (61.5 per cent) are still living and well. For all practical purposes, if the patient remains well for two years, he may be considered cured, as nearly all recurrences or metastases in unsuccessful cases develop within the first eight months following treatment. Since the average age of incidence of carcinoma of the lip is over 56 years, it is difficult to carry statistics beyond five years after radium treatment, because of the high incidence of death due to intercurrent disease.

The thirteen cases in group 2, in which the local growth was very extensive but there were still no palpable glands, give the most striking results, though necessarily the percentage is poor. One patient died of intercurrent disease less than one year after treatment; of the twelve remaining patients, four (33.3 per cent) were living and well two years or more, and three (25 per cent) five years or more, after radium treatment, one having died of intercurrent disease without recurrence of the carcinoma. Failure in this group is due mostly to the fact that glandular metastases frequently became palpable shortly after the patient was first seen and were undoubtedly present, though not palpable, at the time of admission.

TABLE 4.—*Patients Living and Well Without Recurrence*

		Years									Died of Carcinoma
Year	Patients	2	3	4	5	6	7	8	9	10	
1921	13	12	12	11	11	11	10	9	8	8	1
1922	14	14	13	12	12	12	10	8	8	..	0
1923	17	16	16	16	16	16	15	11	..	..	1
1924	9	9	9	9	9	8	8	..	..	..	0
1925	15	14	14	11	9	9	..	..	..	..	1
1926	14	13	11	11	10	..	..	..	..	..	1
1927	17	14	11	10	..	..	..	..	..	..	3
1928	19	17	14	..	..	..	..	..	..	..	2
1929	19	19	..	..	..	..	..	..	..	..	0
Total	137	128	100	80	67	56	43	28	16	8	9

TABLE 5.—*Patients Living and Well, Two, Five and Ten Years After Treatment*

	Number Treated	Living and Well	Per Cent
2 years or more	137	128	93.3
5 years or more	82	67	81.7
10 years	13	8	61.5

Group 3 consists of thirty-six patients having palpable glandular enlargement on first examination. Of these, only two were well four years after treatment; the others were known to be or were considered dead. Practically all these cases were unquestionably beyond help surgically. The primary lesion in a majority of these patients was healed with radium, and the metastases were held in abeyance for many months. Palliation alone in these cases would well justify the use of radium, even if there were not a single cure. It is well to note here that metastases from carcinoma of the lip are late recurrences. Out of the 200 patients (groups 1, 2 and 3) coming to this clinic without having received previous treatment by surgery or radiation, 164 (82 per cent) had no palpable glands on first examination.

Group 4 consists of fifty-two patients who had previous surgical removal, postoperative recurrences, or previous radium or roentgen treatment elsewhere. These cases are so varied, owing to individual circumstances, that they do not lend themselves to statistical analysis. In this group are included twenty-four patients who had recurrences following operation and five who had recurrences following roentgen or radium treatment given elsewhere. Fifteen had a combination of surgical and radium treatment, and the remainder either refused treatment or were in such a hopeless state that treatment was not considered worth while; the latter had invariably been treated by "local healers" with "cancer pastes."

Of the 164 patients in groups 1 and 2, only twelve (7.3 per cent) received more than one application of radium. In the routine treatment, radiation has been given by radon bulbs, one or more bulbs containing from 400 to 750 millicuries each, filtered by 1.5 mm. of brass and 6 mm. of felt, being used. One or more bulbs were used as foci of radiation, according to the area covered by the lesion, and the dosage varied from 250 millicurie hours in the smallest lesion to 1,350 millicurie hours in the largest one. The average dose was from 500 to 750 millicurie hours; this was given at a single application. A marked desquamation followed after four or five days and then slow healing, with heavy scab formation for a period of from six to ten weeks. During this period of healing the patient was advised to remove scabs daily after soaking with warm water and to apply 5 per cent mercurochrome aqueous solution or ointment. This tended to prevent secondary infection by forming a protecting film. In nearly all cases, the lip was perfectly healed without the slightest scar or defect within four months. In the more extensive cases in which there had been widespread destruction of tissue, there was a remarkable tendency toward restoration of the normal contour, leaving only small depressions—never any drawing or contracture of the lip such as follows operation. In twelve cases, from a period of four months to a year later, there were still areas of abnormally thickened epithelium, and a second similar but smaller treatment was given. In six cases, mostly in group 2, in which there was very deep infiltration, treatment was given by implantation with gold needles or a combination of needles and bulbs. In many cases high voltage roentgen therapy was given to the glands of both sides of the neck, even though not palpable, as a prophylactic measure. This procedure was not carried out as a routine, but it is advisable and at present is done in all cases.

From the analysis of 137 cases in group 1 of carcinoma of the lip without metastases I would recommend in this group treatment by radium as preferable to surgical excision for four reasons:

1. The end-results and percentage of cures are excellent—over 93 per cent two year cures and 81 per cent five year cures.

2. There are better cosmetic and functional results.

3. There is a vast saving in expense and time to both patient and hospital, as no hospitalization is necessary.

4. The patient can carry on an occupation as before without an economic loss.

In group 2, I would advise radium to the primary lesion and radical dissection of the glands of the neck, as the end-results show that in nearly all cases in this class metastases have already taken place, though they are not palpable.

In group 3, I would advise irradiation of the primary lesion and removal of the glands surgically, if still small and movable enough to make operation feasible. Unfortunately, in most of these cases the glandular involvement is so fixed and infiltrated that removal is impossible. Here I feel that implantation of radium needles and deep radium or high voltage roentgen therapy to both sides of the neck offers a good deal in alleviating pain and prolonging life and also a remote possibility of a cure.

CONCLUSIONS

1. The answer to the question as to whether radium is an effective treatment for cancer of the lip is that, regardless of allowances, deductions and comparative statistics, the fact remains that 200 patients with definite carcinoma of the lip, some moderate, some extensive, a few even with glandular metastases, were treated by radium alone, and out of these 200 primary cases there remain 133 patients living and well without recurrence two years after treatment, and out of 99 cases treated five years or more ago, 72 patients were living and well five years after treatment.

2. The disease is one that is easily recognizable before it has become extensive locally or has metastasized to the glands and is late to metastasize (82 per cent of the primary cases show no palpable metastases); therefore, one might reasonably expect to get practically all cases while they are still in the curable stage and by irradiation cure over 90 per cent without hospitalization.

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The Mystery of Cortical Function.—In the present state of our knowledge of the adrenal cortex, it is impossible to draw any definite conclusions regarding function. We have pointed out several times in this paper that the real functional significance of the adrenal cortical hormone is unknown. All of the changes reported as occurring in the organism following bilateral adrenalectomy, we regard as secondary to some at present unknown, underlying derangement of the animal. To our knowledge no one has yet succeeded in presenting definite, clear-cut unequivocal evidence of cortical function. The literature is filled with theories and hypotheses of adrenal function—on the relation of the cortex to lipid, carbohydrate, tissue metabolism and mineral metabolism. However, it is our candid opinion that none of these theories or hypotheses withstand careful scrutiny and experimental test, nor do they throw any new light upon the mystery of cortical function. The function of the adrenal cortex is a suitable and intriguing one, but the solution is not yet at hand.—Swingle, W. W., and Pfiffner, J. J.: The Adrenal Cortical Hormone, *Medicine* **9**:412 (Dec.) 1932.

SYPHILITIC CEREBRAL ENDARTERITIS IN A HOMOSEXUAL PSYCHOPATHIC PATIENT

A MEDICOLEGAL PROBLEM

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The older part of the human brain, like the brain of fish, amphibians and birds, is an automatic machine which acts immediately when stimulated by outside occurrences. Light falls on the eye; the pupils close to exclude it. In the higher levels of this old brain, conscious feelings and emotions are provided in order to reinforce the responses and make them more certain. An insulting enemy appears; anger and attacking movements are produced. This level in which feelings appear is the instinctive brain.

The brain cortex is of recent development. It checks the immediacy of the responses for a time, during which a new process, thinking, occurs, which is unknown in lower animals. This new process is registered in our consciousness and introspectively is labeled "remembering," "reasoning" and "decision" (intellect). Biologically speaking, the cortex is a device by which man profits to the highest degree from his past experiences. When the instinctive part of the brain, aroused, say, by an attractive sexual partner, is about to force a man to sexual gratification, the cortex checks the action while mental pictures of past experiences (his own and those of others) are brought into consciousness. These bring still other pictures of what will occur in future if he performs the particular act suggested.

In this way, the brain is acted on not only by the immediate potential sexual partner but by pictures of an angry husband, policemen, and scandalized neighbors. Each picture produces its own appropriate feelings, which may be pleasant or painful. In the end, the cortex ceases to hold the brain in check. The picture in the series which on the whole aroused the most satisfactory feelings acts effectively and determines the corresponding behavior.

Insanity may be due to disease affecting the region of feelings, the intellect, or both. It is commonly thought that insanity involves only the intellect. It is supposed that a man cannot be insane unless his memory or his reasoning power is seriously disturbed. It is important to note that the most serious forms of insanity from the standpoint of the law are those in which the intellect is well preserved while the deeper seated instinctive feelings are abnormal. Such a man is insane as to motivation but unfortunately has enough intellect to carry out his insane plans.

Regarding the case that is to be described, one physician stated that the patient was certainly not insane and in giving his reason said: "I talked with him and found his memory and his knowledge of all sorts of affairs were as good as mine."

REPORT OF CASE

History.—J. A., a boy, born out of marriage in 1907, was described in retrospect by his mother and grandmother as "a very nervous child," never interested in the games and occupations of boys but proficient in crocheting, tatting and embroidery. He was fond of drawing and other art work. He was considered a sissy and frequently dressed in girls' clothes; yet he had no normal fondness for girls and never had a love affair. He grew up effeminate in appearance and with a falsetto voice. There followed a continuous series of abnormal sexual unions with boys and men. In conduct he was mild, and never violent or aggressive. During the year before he came into public attention as a murderer, he lived in Chicago with a Jewish boy; as he described it, "we were the same as a man and his wife." He states that some students lured the partner from him. This was followed by a state of confused emotionality. He wandered around the streets restlessly or remained shut up in his room.

On returning to his Iowa home shortly after this event, he persuaded a 12 year old boy to go for a walk. Failing to induce the boy to yield to his perverted sexual desires, he murdered him.

The judge who tried the prisoner was a man of probity and intelligence. He desired to do away with the usual farce of having lawyers examine expert witnesses. So he summoned two physicians and gave them an opportunity to examine the prisoner in the jail in the presence of the chief of police, after which he questioned them in his chambers. I was one of the two physicians. My examination of the prisoner in the jail revealed the following:

He was effeminate in face, figure and voice. He stated that he was an interior decorator and that he loved art. He conversed in a casual, unconcerned manner, acknowledged his

Fig. 1.—Infiltration around blood vessels in the pia-arachnoid. Enlarged, thick-walled blood vessel. (Nissl.)

crime and expressed conventional regret and sympathy for the parents of the murdered boy but showed no sign of penitence or fear. He spoke of the probable results of the trial without bravado, more with an air of impersonal interest. Although he apparently thought it would be a point against him by still further arousing popular disgust, he nevertheless told me of having been infected with syphilis several years before, of three positive Wassermann reactions, and of treatment in a number of hospitals, which he mentioned by name.

Physical Examination.—His general health appeared excellent. The pupils responded stiffly and with only a slight contraction to light, but widely in accommodation. His tendon reflexes were overactive. He hesitated in repeating test syllables, running r's and l's together. There was no tremor, no ataxia and no disturbance of sensation.

Mental Examination.—Memory, orientation, and reasoning power were normal. There were no sense deceptions or delusions. His emotional tone was bland and unconcerned. Without any show of effrontery or conscious self-control such as experienced criminals often exhibit, and in contrast with what one would expect from his general timidity and delicacy of make up, he conversed with nonchalance about his immediate predicament and his probable execution. He made no excuses

but seemed mildly interested in the alleged fact, as he stated it. that when he had looked at the boy, he went into "a sort of furor or coma," and he now wondered why he should have done so, as it was so different from anything he had ever felt before. He turned easily from this subject to indifferent matters and conversed about them with the casual interest of a person receiving a social call.

When asked by the judge whether or not I considered the prisoner insane, I replied that the history indicated that he had had syphilis and that the mental and physical examinations at present pointed to brain syphilis and were consistent with those often seen in early dementia paralytica. I refused to commit myself to an opinion either that the prisoner was sane or that he was insane unless I should be given opportunity to make serologic examinations. Being director of the State Psychopathic Hospital, I advised that the prisoner be sent there for examination and offered to give a definite opinion after the necessary studies had been completed.

This offer was not accepted.[1] After I had testified, my connection with the case ceased. The newspapers several days later erroneously stated that both the other psychiatrist and I had testified that the prisoner was sane, and they reported that he had been sentenced to be hanged about a year from the date of the trial. It was natural to infer that the court must have obtained satisfactory evidence from other sources that brain syphilis was absent and that the prisoner was sane. The case was then dismissed from my mind.

About a year later, the week before the date for the prisoner's execution, his lawyer placed before me a report on the spinal fluid, said to have been removed the day before the trial. The report revealed 12 mononuclear cells, a trace of globulin, negative Wassermann reaction, and a colloidal gold curve rising only to the second line in the middle tubes. It stated that the blood Wassermann reaction was positive.

The attorney asked me whether that report proved that the patient was sane. My reply was that it was inconclusive; that if we could be sure of the Wassermann test of the spinal fluid, dementia paralytica was very unlikely and could be

Fig. 2.—Increased number of small blood vessels. Higher magnification (as in figure 5) shows numerous, still smaller vessels in any area inspected. (Weigert-Pal.)

assumed to be absent; but that several Wassermann tests should be made, so as to rule out errors in technic. I stated that the report made it the clear duty of the state not to execute the man until an examination at the present time revealed his clinical and serologic status; for, if brain syphilis or beginning dementia paralytica had been present the year before, the likelihood was that sufficient advance would have occurred during the year to give clear-cut neurologic and laboratory evidence, which would remove the doubt.

Fig. 3.—A small blood vessel with endothelial proliferation somewhat resembling small-cell infiltration. Note atrophic area around vessel. (Nissl.)

The prisoner's attorney was both able and generous. Without financial reward, indeed at considerable expense to himself, he had sought only to have the safeguards provided by law observed in the case of his unfortunate client. He at once applied to the governor of the state for a reprieve long enough to secure the medical examination which was obviously called for. The laws of Iowa provide that if a reasonable doubt as to the sanity of a prisoner exists, the executive or the prison warden, even up to the minute of the execution, shall delay proceedings until the medical examination is made.

The night before the morning set for the execution, the lawyer informed me that the prisoner's request for a reprieve had been refused. In the meantime, information was brought that the prisoner had directed the prison warden to turn over his body to the state university for a postmortem examination. Although I had no connection with the case and felt only the interest of an ordinary citizen regarding the good name of the state and the securing of fair play for a prisoner, believing that some misunderstanding must exist in the executive's mind, I telegraphed him that a reasonable doubt existed as to the prisoner's sanity and that an appropriate medical examination would resolve that doubt.

No reply was given to this message. The newspapers stated that the youth was hanged at the appointed hour. His light-hearted conversation and gay manner as he stepped on the trap-door were described by one newspaper reporter as indisputable evidence that no insanity existed.

The Postmortem Examination.—Pathologists from the University of Iowa performed an autopsy immediately after the prisoner was pronounced dead. The brain and spinal cord were removed and placed in solution of formaldehyde. Within a few hours, blocks were cut from the brain for alcohol fixation, which were prepared and studied in my laboratory.

Microscopic examination revealed generalized mild round cell infiltration of the membranes, while in many parts of the pia-arachnoid the infiltration was dense (fig. 1) and included large mononuclears, mast cells and plasma cells. The blood vessels in the pia mater showed widespread proliferation of the intimal cells and thickening of the walls, with hyaline degeneration.

1. The services of the State Psychopathic Hospital were offered to determine a scientific point that had to be clear before the law could function in this case. It was afterward reported that the judge desired to avail himself of this offer but was hindered from doing so by some statute. If this is true, it appears that a state hospital for the study of insanity could not be used to serve a state court in a case which hinged on a question of insanity.

The white matter and especially the brain cortex, particularly in the frontal and parietotemporal lobes and in Ammon's horn, were diseased. With low power lenses an enormous increase in the number of small blood vessels was apparent (fig. 2), together with thickening of the intimal lining of the small and middle-sized vessels. In various localities, in Nissl stained sections, large or small pale areas appeared which under high power showed absence of nerve cells with increase in neuroglia.

With higher magnification, extensive multiplication of capillaries was observed, with budding and new capillary formation (fig. 5). Many of the smaller blood vessels were completely stopped by intimal plugs; in many, the lumen was obstructed or divided into several channels (fig. 3). Longitudinal sections of the blood vessels showed an increase in endothelial elements, which often gave the appearance of infiltrations.

The glia cells throughout showed increase in cytoplasm. In many instances the cell body was confusible as to size and appearance with nerve elements. Massive conglomerations of glia cells were numerous (figs. 4 and 6). Few nerve cells were found which did not show Trebant cells, in some cases a few, in many a large number, lying within recesses in the cytoplasm.

The nerve cells in all preparations showed dilapidation (fig. 5). The nuclear chromophil dots could not be distinguished, and the nuclei were displaced toward the periphery. The Nissl granules in most of the nerve cells had disappeared, and the cell body showed a cheesy consistence, in many cases with vacuoles. A large number of the cells were shrunken, distorted and honeycombed.

Sections stained by Jahnel's method revealed no spirochetes.

The neuropathologic diagnosis was syphilitic meningitis of the spinal cord and brain; syphilitic endarteritis throughout the whole nervous system; degeneration of nerve cells, and reactive proliferation of the neuroglial elements.

Early dementia paralytica was clinically indicated by (1) the sudden resort to violence in uncontrolled obedience to instinct in a man theretofore mild and passive; (2) the euphoric mood of the patient at the time of my examination, which became

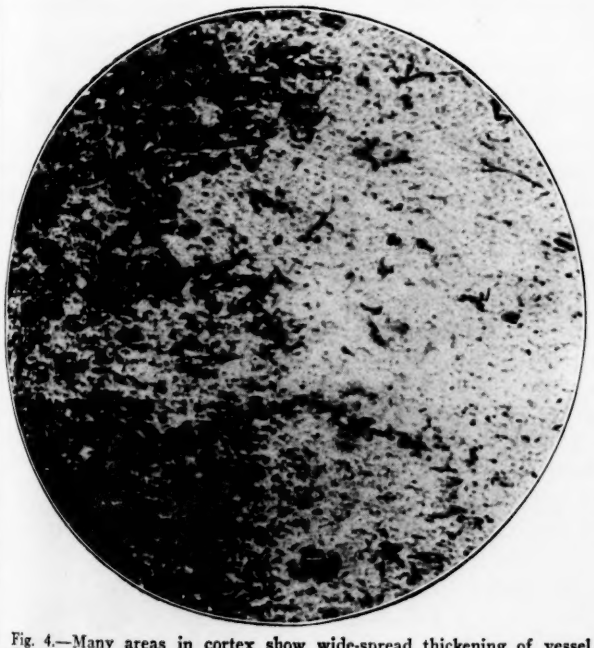

Fig. 4.—Many areas in cortex show wide-spread thickening of vessel walls with masses of large glia cells staining brown to black with Weigert-Pal stain.

more marked later in prison and at the execution, and (3) the neurologic signs. Neuropathologic examination gave no proof that dementia paralytica was present. But it must be kept in mind that early dementia paralytica may be masked in the vascular and cytologic changes of syphilitic endarteritis.[2]

2. Jakob, A.: Handbuch der Psychiatrie, **2**: 593, 1929. Nonne, Max: Syphilis und Nervensystem, p. 573. Alzheimer, Alois: Die Syphilitischen Geistesstörungen, Allg. Ztschr. f. Psychiat. **66**: 920, 1909.

Westphal [3] called attention to cases of psychic excitement with exalted self-consciousness and peculiarly changeable grandiose ideas, and stated as his opinion that these cases are not to be classified (clinically) as paretic so long as the change in personality is not distinctly marked and progressive dementia is absent.

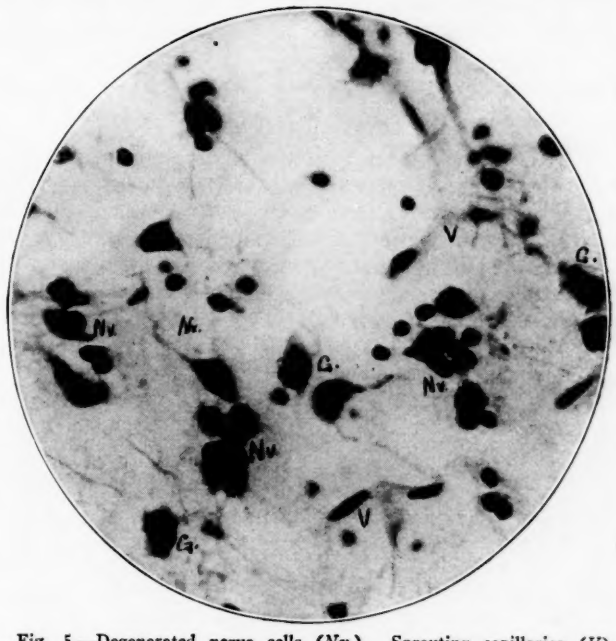

Fig. 5.—Degenerated nerve cells (*Nv.*). Sprouting capillaries (*V*). Glia cells with moderate increase of cytoplasm (*G*). (Nissl.)

These patients preserved the power of observation and the general intellectual faculties were maintained. The tissue changes consisted in endarteritis of the small vessels of the brain.

MENTAL IMPAIRMENT IN ENDARTERITIS SYPHILITICA

In syphilitic endarteritis of the brain, the blood supply to the essential cerebral cells is restricted. Disturbance of function, cell death and finally loss of function follow. The mental pictures described by Nonne,[4] Alzheimer,[5] Jakob,[6] and others in patients suffering with syphilitic endarteritis include those of early dementia paralytica, of arteriosclerotic psychoses, schizophrenia, manic-depressive psychosis, paranoia and various psychoneuroses. Particular symptoms [7] described are excitement, plaintiveness, irritability, destructiveness, hallucinations, paranoid ideas of persecution, sudden mood changes, anxiety; loss of self-control in regard to stealing,[8] drinking and sex; raving, confused states, absence of insight, stupor, apathy and

3. Westphal: Ueber die Differential diagnose der Dementiaparalytica, Med. Klinik, 1905, number 27.
4. Nonne: Syphilis und Nervensystem, chapter VIII.
5. Alzheimer: Allg. Ztschr. f. Psychiat. **66**: 921-922, 1909.
6. Jakob: Handbuch der Psychiatrie, p. 579.
7. Freund: Virchows Arch. f. path. Anat. **232**, 1921. Malamud: Ztschr. f. d. ges. Neurol. u. Psychiat. **102**: 778, 1926.
8. Two years ago a respected middle-aged business man startled his friends by a series of petty forgeries. When I asked him why he had attempted such easily detected frauds, he smiled cheerfully and replied, "I just felt good and thought I could get away with it." Theretofore a reticent man, he now talked without reserve of his personal affairs. His intellect appeared to his acquaintances as good as ever. No one suspected insanity. On examination the pupils were unequal, not circular, but the reaction was good to light and in accommodation; there was tremor of the tongue, drawling speech and hyperactive tendon reflexes. The Wassermann reaction of the blood was ++++; of the spinal fluid, Wassermann ++; globulin, a trace; colloidal gold curve, 1123432100. Fortunately, cerebral syphilis pushed him only into a minor crime, and one not too repugnant to popular feelings. The prosecutors were glad to excuse him and permit him to be treated in a hospital. Autopsy would probably have shown the same sort of picture as that of J. A.

dementia. One or several of these occur in a given case; and at the beginning, as in dementia paralytica and cerebral arteriosclerosis, the only mental disturbance noted may be in the mood variations and defective inhibition of instincts.

Winkelman [9] has recently pointed out that the various brain diseases in which the intima of the small cerebral vessels shows proliferation, with constriction of the lumens, are characterized chiefly by mental rather than by motor or sensory disturbances in function.

AN INSTRUCTIVE CASE

It is my opinion, based on the earlier clinical examination and the final autopsy, that this prisoner was insane and ought to have been confined in a hospital and not executed. In view of the autopsy, it is certain that clinical and laboratory examinations just before the date set for the execution would have shown that the brain was seriously diseased.

Certain important general truths are brought into attention by this particular case:

1. Sexual perversion is not in itself a form of insanity. A sane pervert who commits a crime to satisfy his abnormal cravings is to be treated by the courts in the same way that obtains in the case of an ordinary man who rapes or murders to satisfy normal lust.

Fig. 6.—A conglomerate of glia cells attached to a large nerve cell and extending far up and down. The upper half is partly out of focus.

2. But a sexual pervert may become insane, just as he may develop appendicitis or a brain tumor. Indeed these psychopathic patients are always poorly balanced and tend, under small strains, to slip over into insanity. The law should then deal with them as with any insane person.

Unfortunately, being of perverted instincts, psychopathic persons are prone, when insane, to commit disgusting crimes. Popular clamor then renders doubly difficult the duty of courts and physicians who seek unemotionally to carry out the laws which the people in their cooler moments have approved.

3. The generally accepted conception of insanity is incorrect. Even the average well informed person supposes that marked defects of memory and reasoning, with disorderly behavior, are necessary marks of insanity. Our courts still puzzle themselves over the impossible problem of "responsibility," while lawyers and witnesses sink into the murkiest depths of metaphysics when discussing it.

The truth, established on clinical facts, is that insanity of the most dangerous kind exists in abundance in which the reasoning power is well preserved and behavior for months may be perfectly orderly. Familiar examples of such forms of insanity are paranoia, mild mania or depression, epileptic fugues, and early dementia paralytica.

4. Endarteritis syphilitica of the cerebral vessels cuts off the blood supply to the essential cells of the brain. When this disease is present in a particular patient, the probability exists that serious deterioration of those cells has occurred. The presumption of insanity is so clear that the sufferer should not be considered "responsible," as the law uses that term. He should be treated in a hospital, not in a prison.

State Psychopathic Hospital.

9. Winkelman, N. W.: The Importance of the Small Blood Vessels of the Brain in Psychiatric Problems, Am. Psychiat. A., May 31, 1932.

ROENTGEN STUDIES OF PATIENTS WITH GASTRO-INTESTINAL FOOD ALLERGY

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Roentgen studies of disturbances in the muscular tone and peristaltic activity in the gastro-intestinal tract originating from food allergy will be considered in this contribution. Previously, little attention has been paid to such disturbances. A few interesting observations, however, have been recorded. Crispin,[1] in 1915, in his study of a patient who had suffered from angioneurotic edema, associated with abdominal pain and hematemesis, observed by roentgen ray a lesion near the pylorus, which was found at operation to be due to angioneurotic edema. This is now recognized as an allergic condition. Eyermann [2] in 1927 published the only previous roentgen study of the results of deliberate feeding of an allergenic food on the function of the gastro-intestinal tract. His patient, a woman, aged 35, had had urticaria, epigastric burning, regurgitation, hiccups, alternating constipation and diarrhea, abdominal colic, pain in the upper right part of the abdomen and much intestinal gas and bloating for eight years, arising from wheat allergy. After the intentional ingestion of wheat, no disturbances were observed by the roentgen ray in the stomach or intestine, but disharmonic tonus in the colon was noted, hypotonus being present in the cecum and ascending colon and hypertonus in the transverse and pelvic colon. These conditions were absent when the patient was on a wheat free diet. In the routine examination of patients with gastro-intestinal allergy, colonic spasticity and other less frequent disturbances in function of this tract have been recorded by me [3] and recently by Gay.[4] It is of interest that Ecker and Biskind,[5] in 1929, recorded cinematographically the allergic reactions of a rabbit's intestine during anaphylactic shock.

That gastro-intestinal symptoms due to food allergy are common has been emphasized by several allergists. When it is remembered that mucous membrane edema and smooth muscle spasm are the main results of allergy, it is not surprising that this tract, which contains so much mucous membrane and smooth muscle, is the frequent seat of such allergic reactions.

1. Crispin, E. L.: Visceral Crises in Angioneurotic Edema, Collected Papers of Mayo Clinic **8**: 823, 1915.

2. Eyermann, C. H.: X-Ray Demonstration of Colonic Reactions to Food Allergy, J. Missouri M. A. **24**: 129 (April) 1927.

3. Rowe, A. H.: (*a*) Food Allergy, Its Manifestations, Diagnosis and Treatment with a General Discussion of Bronchial Asthma, Philadelphia, Lea & Febiger, 1931; (*b*) Gastro-Intestinal Allergy, J. A. M. A. **97**: 1440-1444 (Nov. 14) 1931.

4. Gay, L. P.: Abdominal Allergy, J. Missouri M. A. **29**: 7 (Jan.) 1932.

5. Ecker, E. E., and Biskind, M. S.: Allergic Reactions of the Rabbit's Intestine During Anaphylactic Shock as Recorded Cinematographically, Arch. Path. **7**: 391 (March) 1929.

In 1931, I [3a] stated that:

Roentgenologists and physicians must recognize the frequency of food sensitization as a cause of gastro-intestinal symptoms when roentgen-ray studies are to be made. Since food allergy is a definite cause of colonic spasm, hyperperistalsis and other irregularities in peristalsis, the examination of a patient for the determination of actual lesions in the alimentary tract theoretically should be done when the patient's diet has been free of foods to which allergy exists for at least seven to fourteen days. It is probable that functional spasm of the cardia, pylorus, colon as well as irregular spasms in the stomach and small intestine may be due to allergy, and when any indication of such etiology exists allergy should be seriously considered.

In the administration of barium either in the meal or by enema, if milk allergy is suspected at all, a cereal or tapioca gruel or some other vehicle should be used. I realized this fact some years ago when I tried to study the gastro-intestinal tracts of such sensitive patients. Several milk-sensitive patients had vomiting or immediate pain and colic from malted milk in which the barium was suspended. It is my practice at present, if a patient is on one of my "elimination diets" for the diagnostic determination of a food allergy, always to administer the barium in a gruel made of the starch specified in the diet, i. e., rice in Diet No. 1 and corn in Diet No. 2. In this way the production of allergic reactions in the intestinal tract can be lessened during the roentgen study. However, if it is desired to determine the effects of food allergy on the function of the stomach and intestines, the food to which allergy exists can be given. There is a definite need to make further studies on the roentgen-ray manifestations of food allergy, as has been done by Eyermann.

The present study is the result of this realization of the importance of further observations of the effects of reactions from foods productive of allergenic reactions in the gastro-intestinal tract. Four patients were selected who had marked and prolonged gastric symptoms which had been relieved by the elimination of specific foods. Careful physical examinations and laboratory studies had ruled out other causes. The elimination of definite foods had relieved the symptoms and the reintroduction of the same foods in the diets had reproduced the symptoms on more than one occasion in each patient. Roentgen observations consisted of fluoroscopic examinations and roentgenograms made immediately on the ingestion of barium and three, six and twenty-four hours thereafter. Such studies were first made when the patients had been free from their symptoms for several weeks as the result of their strict adherence to their "elimination diets." The barium was administered in a corn meal gruel. About two or three weeks after this initial study a second series of observations was made after the patients had taken milk or milk and eggs for one or two days. The barium was also administered in malted milk, to which each patient was sensitive. Marked disturbances in muscular tone and motility resulting from probable allergic reactions in the gastro-intestinal tissues were observed in each of the four patients. These will be described in the following reports as recorded by Dr. F. B. Mandeville of the Peralta Hospital, to whom I am indebted for his roentgenologic observations and interpretations:

CASE 1.—*History.*—A man, aged 40, had had distention, bloating and fulness after most meals, associated with heartburn, sour regurgitation and a sensation of a lump in the epigastrium for the last three years. These symptoms had occurred about one hour after eating and had persisted until the following meal. There had never been any nausea or vomiting. Constipation had gradually increased in the last three or four years. During this period he had taken physic every week or two and had noted a heavy toxic feeling with a tendency to dull headaches when the bowels became badly constipated. Up to four years ago there had never been any indigestion or constipation. His persistent symptoms worried him a great deal because his father had died of cancer of the stomach at the age of 40. The patient had found that starchy foods increased his gastric symptoms. Cabbage had always produced gas on the stomach. He had never suffered from hives, eczema, hay fever or asthma.

His family history was negative for allergy. His past history was unimportant. Skin reactions to wheat, milk and eggs by the scratch and intradermal methods were negative on four different occasions during the first ten months. His physical examination was negative. Hypo-acidity was found after a test meal of 7 per cent alcohol. The patient was given "elimination diets" 1 and 2 minus lettuce, plus grapefruit. Fifteen drops of dilute hydrochloric acid before and after meals were given. The symptoms were much relieved. The acid was discontinued. Relief persisted during the following month, and the foods in diet 3, together with fish, potatoes and oranges, were gradually added. The bowels began to move every other day and were formed. Then milk and its products

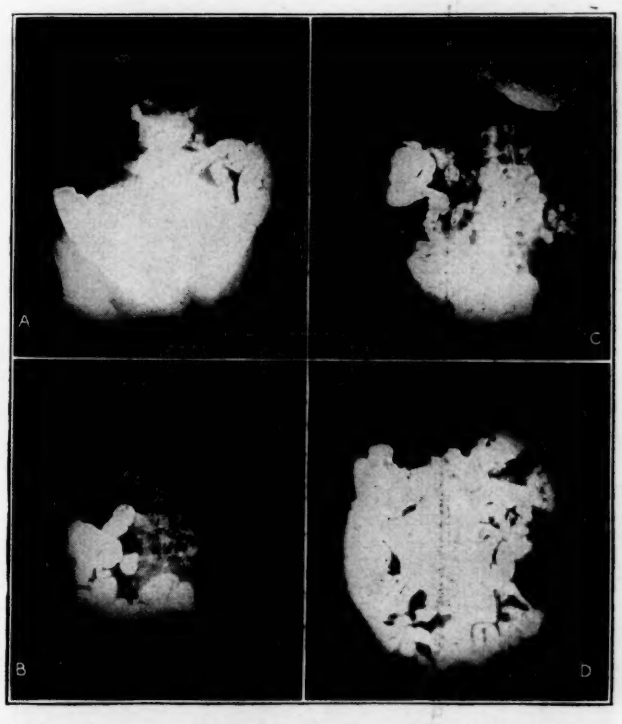

Fig. 1 (case 1).—Hyperperistalsis, pylorospasm, hypermotility and gastric retention after the addition of allergenic milk to the diet. Original complaint: sour stomach, belching, gastric distention and discomfort. In the illustrations, *A* and *B* show the result of the elimination diet; *C* and *D* show the result of adding milk in figures 1 and 4 and of milk and eggs in figures 2 and 3. *A* and *C* show the condition at three hours; *B* and *D* at six hours.

were added, and in two weeks eggs were tried. The old symptoms returned and during the year since then he has determined that milk, eggs and wheat have usually reproduced his old symptoms in one or two days.

Roentgen Studies.—The first examination was done when the patient had been free from symptoms and had been on his "elimination diet" for several weeks. Because of his known sensitization to milk, the barium was administered in corn meal gruel. The results of this study were as follows:

Combined fluoroscopic and roentgenographic examination after the ingestion of a barium meal demonstrated the esophagus to be normal. The stomach was orthotonic in type with its greater curvature 3 inches above the crest of the ilium. Peristalsis was two cycle in type and uninterrupted. No defects were noted on the walls of the stomach or duodenal bulb. The duodenal bulb was small and filled with difficulty. There was no deformity. The barium left the stomach readily. An immediate film revealed it in the upper jejunum.

At three hours the barium was in the terminal ileum. There was a slight residue in the stomach and in the second and third portions of the duodenum and jejunum.

At six hours there was no retention in the stomach. The barium was in the ascending colon and the remainder was in the terminal ileum.

At twenty-four hours the barium was distributed throughout the large intestine from the cecum to the rectum.

Conclusion: There was no evidence of pathologic change of the gastro-intestinal tract.

The second examination was carried out seven days later. The patient had taken milk and a moderate amount of cream for one day before the second examination, and the barium was administered in malted milk. During the second examination after he had taken milk for one day the patient had the same fulness and distress in the epigastrium which had bothered him for three years before our control. The roentgen demonstration of marked three hour and six hour retention with retarded intestinal motility explains the cause of such discomfort.

The esophagus was normal. The stomach was orthotonic in type. Peristalsis was two cycle in type, the peristaltic waves

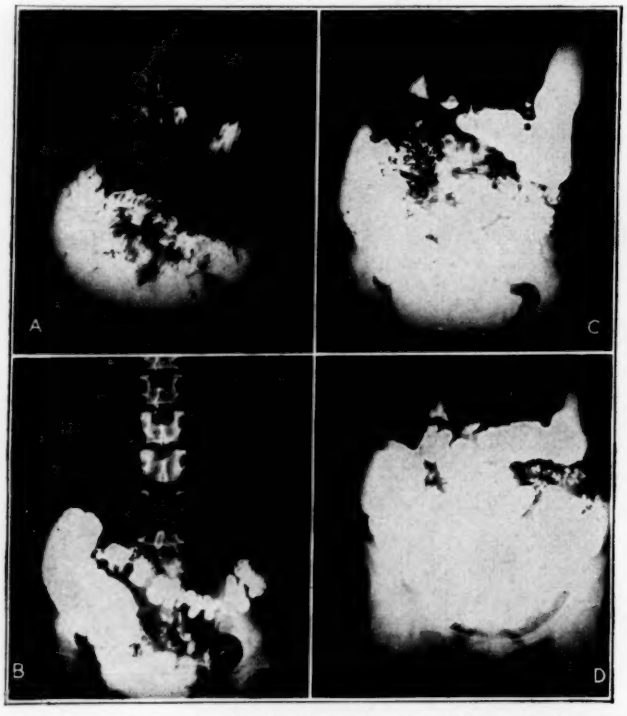

Fig. 2 (case 2).—Gastric retention after the addition of allergenic milk and eggs. Original complaint: epigastric distention, abdominal distress, fulness in the lower right quadrant, nausea, chronic constipation and headaches.

were deep, and there was definite hyperperistalsis noted particularly during the first part of the fluoroscopic examination. There was a definite pylorospasm. The duodenal bulb was filled with difficulty. It was visualized in the prone position and was small and regular. The greater curvature of the stomach was 3 inches above the crest of the ilium and there were no filling defects on the walls of the stomach or duodenal bulb. The barium left the stomach slowly.

At three hours the barium had progressed to the midportion of the ascending colon. There was some barium in the jejunum and a moderate amount in the ileum. At least half of the barium meal was retained in the stomach.

At six hours there was a small amount of barium in the stomach and duodenum. The barium meal had progressed to the proximal portion of the descending colon. There was a considerable residue in the jejunum and ileum.

At twenty-four hours the barium was distributed throughout the large intestine from the cecum to the rectum. The lumen of the appendix was filled with barium. There was no point tenderness over the appendix.

Conclusion: On the immediate examination there was hyperperistalsis and pylorospasm.

At three hours there was moderate residue in the stomach and slight intestinal hypermotility.

At six hours there was retention in the stomach and definite intestinal hypermotility.

None of these conditions were present on the previous examination when the patient was on a milk-free diet.

Comment.—The marked gastric retention, pylorospasm and hypermotility can best be explained as the results of milk sensitization. The hypo-acidity indicated possible lack of digestive function as a cause. However, the symptoms recurred only with the ingestion of milk, eggs and wheat and not with meats and other foods in the patient's "elimination diet." Starch indigestion was ruled out because of his ability to take liberal amounts of rice, corn and potatoes. The possible effect of the patient's concern about cancer needs to be considered. The relief and reproduction of his symptoms, however, by the withdrawal and ingestion of the specific foods, contradicts the possibility of nervousness as a cause.

Case 2.—*History.*—A woman, aged 25, had had a sensation of fulness in the epigastrium and a generalized abdominal distress after meals for ten years. There had also been a soreness and a dull aching in the lower right quadrant for an equal period, which had been diagnosed as chronic appendicitis. Nausea but no vomiting had frequently occurred. There had been definite constipation of the bowels most of the time for many years. Headaches characterized by severe pain in the top of the head and the back of the neck associated with a toxic feeling and relieved by a physic had recurred frequently. As a child she had had frequent attacks of colicky pain throughout the abdomen. For ten years she had had a persistent type of eruption on the face, especially around the mouth and on the chin. This was aggravated by constipation and when she ate rich foods. She had no food dislikes but knew that red cabbage, lima beans, bread and pastries disagreed with her. There was no history of hay fever, asthma, eczema or hives. However, there had been a nasal congestion and watery discharge every morning for several years. The family history was negative for allergy, and her previous history was unimportant.

Physical examination was negative except for a marked acne-like eruption around her mouth and on her forehead, chin and slightly over the cheeks. Moderate tenderness was elicited over the lower right quadrant. Normal gastric acidity was found. Skin testing was negative with all types of food by the scratch method and with the intradermal method with extracts of wheat, milk and eggs.

With the use of the "elimination diets" it has been demonstrated during the last year and a half that a wheat, milk, egg, orange, apple and cabbage free diet relieves her from all her gastric symptoms, her appendix-like pain and her facial eruption. She likewise has been practically free from constipation.

Roentgen Studies.—The first examination was carried out when the patient had been free from symptoms for several weeks as a result of the elimination of the specific foods already mentioned. The barium was administered in corn meal gruel because of the patient's known allergy to milk. The results of this study were as follows:

Fluoroscopic and roentgenographic examination of the gastro-intestinal tract after the ingestion of a barium-gruel mixture demonstrated that barium entered the stomach readily and progressed to the pylorus immediately. The stomach was ptosed, with its greater curvature 4 inches below the crest of the ilium in the erect position. The stomach was J shaped, and peristalsis was of the two cycle type and uninterrupted. Peristalsis was noted immediately on the entrance of the barium into the stomach. The waves were moderate in depth and well within normal limits. The duodenal bulb filled out immediately and no defect or tenderness was noted. The second and third portions of the duodenum were slightly dilated with barium, and there was some reversed peristalsis starting in the third portion of the duodenum near the ligament of Treitz.

At twenty minutes there was a considerable amount of barium in the pelvic jejunum.

At one and one-half hours there was moderate retention in the stomach and duodenum, and the barium was in the distal ascending colon, the greater portion in the ileum.

At three hours the barium had progressed to the splenic flexure. There was very slight retention in the stomach. The colon was generally ptosed, with the hepatic flexure at a level of the crest of the ilium.

At six hours the barium was in the distal transverse colon and there was some residue in the terminal ileum. There was no retention in the stomach.

At twenty-four hours there was a moderate amount of barium in the cecum, the ascending and transverse colon and a stringlike shadow of barium in the splenic flexure and descending colon and a few flecks of barium in the rectum. The appendix was not visualized.

Conclusion: There was ptosis of the stomach and small and large intestine. Reversed peristalsis in the second and third portions of the duodenum and hypermotility were especially noted on the one and one half hour film; otherwise the examination was negative.

The second examination occurred two and a half months later, after the patient had taken milk and eggs for several days. Her symptoms returned after several days, indicating that a moderate tolerance had developed to her allergenic foods. The barium was administered in malted milk. The results of this examination were as follows:

Reexamination of the gastro-intestinal tract showed that the esophagus was normal. The stomach was J shaped, with its greater curvature below the crest of the ilium. Peristalsis was two cycle in type and uninterrupted. The tone was good and the duodenal bulb was clearly outlined. The second and third portions of the duodenum were again moderately dilated. The stomach emptied itself readily. There was no point tenderness.

At three hours there was retention of almost half the barium meal in the stomach and duodenum. The barium had progressed to the hepatic flexure. At six hours there was retention of approximately one fourth of the barium meal in the stomach and duodenum. The barium had entered the descending colon. The transverse colon was spastic.

At twenty-four hours there was no retention in the stomach. There was a large amount of barium distributed throughout the large intestine from the cecum to the rectum, especially in the proximal part of the ascending colon, and the descending and sigmoid colon as compared with the observations in the first examination. The transverse colon was spastic, and there was a stringlike shadow in the sigmoid.

Conclusions: There was retention in the stomach at three and six hours on the second examination.

CASE 3.—*History.*—A man, aged 43, seven years before had developed pain in the epigastrium associated with nausea and vomiting. Burning and marked heaviness in the stomach were present. The results of the roentgen examination are taken from the roentgenologist's report. "There was moderate spasm of the pylorus. The stomach itself seems negative for evidence of organic pathology. The duodenal cap is regarded with considerable suspicion as being involved with an ulcer, although the definite ulcer niche could not be located. The tract seems otherwise negative." The Sippy diet was tried for about three months with questionable improvement, so that a gastro-enterostomy was resorted to. A detailed description of the conditions found at operation is not available. Soon after his operation he began to vomit again, and a second operation was done six months later to enlarge the opening. Vomiting returned a few days after the resumption of food and continued for many months. Finally he gradually determined that the nausea and vomiting were influenced by certain foods, such as milk, eggs, pineapple and coffee. A meat and vegetable diet gave him definite relief, and he had found since then that milk, cream or eggs eaten for a few days always produced nausea, cardiac irregularity, vomiting, marked nervousness and palpitation lasting for several days. For the last two years he had been subject to severe recurrent headaches and fatigue, so that now they were recurring once or twice a week. Intermittent pain in various joints of the body had occurred for the past year. No other allergic disturbances had ever been present.

He had had indigestion in childhood and fainting attacks which were influenced by constipation. All kinds of examinations and tests, including spinal puncture, gallbladder studies and stool examinations as well as various diets and three abdominal operations, had been without avail.

His family history revealed that his mother had had headaches, an irregular heart, indigestion and fainting spells nearly identical with those symptoms of the patient's. One of the patient's children has severe asthma. Physical examination and laboratory tests were negative. Skin tests with all types of food by the scratch method and with the most important foods by the intradermal method were negative.

With "elimination diets" 1, 2 and 3 plus potato his symptoms have been absent. He has found on several occasions that milk and eggs especially produce nausea, vomiting, palpitation and nervousness. When milk and eggs were taken for three days previous to the second roentgen examination recorded here, it took about four days to recover from the marked nausea and about three weeks to overcome all the resulting digestive and toxic symptoms.

Fig. 3 (case 3).—On elimination diet, roentgen study showed patent gastro-enterostomy and hypermotility. After addition of milk and eggs, gastric and duodenal retention and decreased intestinal motility resulted. Two gastro-enterostomies had failed to relieve nausea, belching and vomiting, which were controlled by elimination diets.

Roentgen Studies.—The first examination was made when the patient had been free from symptoms because of his adherence to his elimination diet for several weeks. The barium was given in corn meal gruel because of his known allergy to milk. The results of this study were as follows:

Fluoroscopic and roentgenographic examinations after the ingestion of a barium meal demonstrated that the esophagus was normal. The stomach was J shaped, with its greater curvature at a level of the crest of the ilium. The barium left the stomach immediately through the gastro-enterostomy opening and filled the loops of the jejunum situated in the lower pelvic region. There was no point tenderness over the stomach, and pressure exerted over it filled the pylorus and the duodenal bulb and the second and third portions of the duodenum. No ulcer niches were seen.

At three hours the barium had progressed to the upper part of the rectum. There was a small residue in the jejunum and ileum and the remainder was distributed throughout the large intestine. There was a small fleck of barium in the stomach.

At six hours the barium was distributed throughout the large intestine and there was some residue in the terminal ileum.

At twenty-four hours the barium was distributed throughout the large intestine from the cecum to the rectum. The large intestine was moderately spastic.

Conclusions: 1. There was no definite evidence of gastric or duodenal ulcer or a malignant condition of the stomach at this time.

2. There was a patent gastro-enterostomy opening.

3. Intestinal hypermotility was noted during the immediate, three and six hour examinations.

The second examination was done fifteen days later. The patient had taken milk and eggs for three days before this study and the barium was given in malted milk. The results of this examination were as follows:

Reexamination after a barium meal showed that the esophagus was normal. The stomach was J shaped, with its greater curvature at the crest of the ilium. The barium left

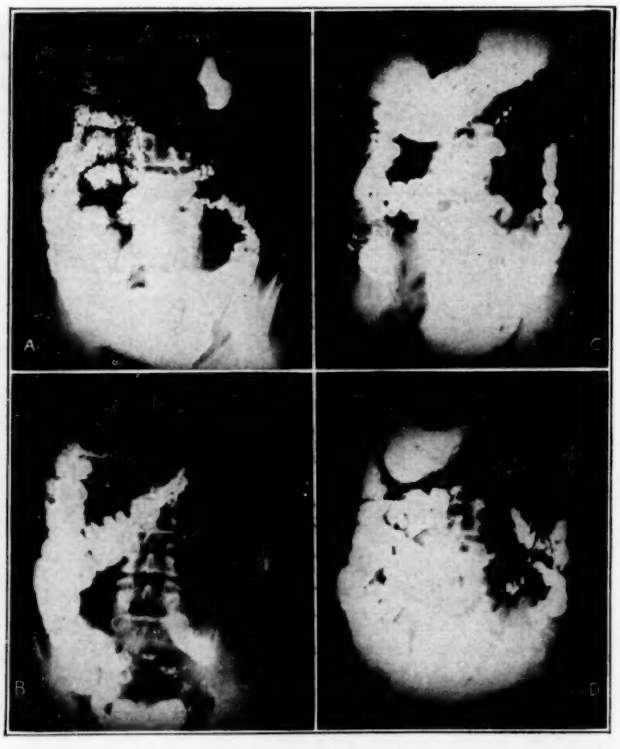

Fig. 4 (case 4).—Gastric retention after addition of allergenic milk. Original complaint: heaviness and discomfort in the epigastrium and upper right quadrant, sour stomach and constipation.

the stomach immediately through the gastro-enterostomy opening and filled the loops of the jejunum in the lower pelvic region. There was no point tenderness in the pyloric region, and the duodenal bulb and the second and third portions of the duodenum were filled. Immediate films were similar to those of the first examination.

At three hours there was a moderate residue in the stomach and duodenal bulb and in the jejunum and ileum. The barium had progressed to the distal ascending colon.

At six hours there were several flecks of barium in the stomach and the duodenal bulb. There was a moderate residue in the jejunum and marked residue in the ileum. The barium had progressed no farther in the large intestine than in the three hour film. It was in the distal ascending colon.

At twenty-four hours the barium was distributed throughout the large intestine from the cecum to the upper part of the rectum.

Conclusions: 1. On comparison with the previous examination there was now noted a retention in the stomach and duodenum at three hours and six hours and a decreased motility in the entire small intestine.

2. The marked hypermotility in the large intestine noted in the first examination was no longer present.

3. There was a stringlike shadow of barium in the sigmoid region and a moderate spasticity of the large intestine suggesting an irritable colon.

Comment.—The three hour and six hour retention probably resulted from milk and egg allergy in this patient in spite of the gastro-enterostomy. It is best explained by allergic reactions to the specific foods producing a mucosal edema or smooth muscle spasm which interfered with normal peristaltic activity in the small intestine and possibly in the stomach itself.

There is a definite question about the original presence of a duodenal ulcer. The roentgen report in 1924 was indefinite and no detailed operative account at that time is on record. No evidences of healed ulcer are now evident. The immediate recurrence of vomiting after both operations indicates that food allergy had been the probable cause of all the symptoms and that both operations might have been avoided.

Case 4.—*History.*—A man, aged 41, had had heaviness and discomfort in the epigastrium and in the upper right quadrant radiating up into the right lower part of the chest intermittently for two years. Milk especially increased these symptoms. Eggs for many years had upset his digestion. Oranges, lemons and berries had caused sour stomach. Headaches had never occurred, though he often had a dull, heavy, toxic sensation. The bowels had always been constipated. Frequent canker sores, a coated tongue and gums and nasal congestion, especially on arising, had recurred for years. No other allergy was elicited in the family or personal history. His past history was unimportant.

Physical examination, blood, urine and gastric analyses were negative except for a sallow complexion and a moderate six hour gastric retention. The gallbladder filled and emptied normally after the oral administration of phenoltetraiodophthalein. Skin tests by the scratch method with all types of foods and all important inhalants were negative and were also negative by the intradermal method with wheat, milk, eggs and other important foods.

With "elimination diets" 1, 2 and 3 minus lettuce, plus potato, the pain and fulness in the upper right quadrant and epigastrium and the radiation of pain into the lower right part of the chest disappeared. The bowels became normal—the "best they had been in twelve years." The toxicity, which had bothered him especially in hot weather, was eradicated. The indigestion, canker sores and nasal congestion were relieved. But "the minute he gets off his diet he gets into trouble."

Roentgen Studies.—After the patient had been on the proper "elimination diet" for six months he agreed to allow me to study his gastro-intestinal tract while he was on his "elimination diet" and free from his former symptoms for many weeks. Because of his known sensitization to milk, the barium was given in corn meal gruel. The results of this study were as follows:

The esophagus was normal. The stomach was J shaped, with its greater curvature 1 inch below the crest of the ilium. The tone was good, and peristalsis was two cycle in type and uninterrupted. The duodenal bulb was normal. No tenderness was noted.

At three hours there was a small amount of barium in the pyloric region and duodenum and strings of barium in the stomach. The barium was distributed through the jejunum and ileum and there was none in the large intestine.

At six hours there was no retention in the stomach, duodenum or jejunum. There was some barium in the terminal ileum and it extended to the distal descending colon. The barium shadows in the transverse and descending colon were stringlike in appearance.

At twenty-four hours the barium extended from the cecum to the rectum. There were stringlike shadows in the transverse and descending colon which suggested an irritable colon.

Conclusions: 1. There was no evidence of gastric or duodenal ulcer or a malignant condition.

2. Hypermotility in the large intestine at six hours and stringlike shadows in the transverse and descending colon, with lack of haustration, suggested a possible irritable colon.

The second examination was carried out two days later, after the patient had taken milk for one day. On the morning of this examination the old digestive distress had returned. The barium was given in malted milk. The results of this examination were as follows:

A second meal showed the esophagus, stomach and duodenal bulb to be within normal limits. Peristalsis was two cycle in type and peristaltic waves were hyperactive. The stomach was below the crest of the ilium and the tone was good.

At three hours there was retention of two thirds of the barium meal in the stomach. The barium had progressed to the ileum but had not reached its terminal portion. There was very little barium in the jejunum.

At six hours there was retention of approximately one third of the barium meal in the stomach and there was barium in the duodenal bulb. There was a small amount of barium in the jejunum. The greater portion of the barium was in the terminal ileum, and it had entered the cecum. The second barium meal had apparently progressed to meet the first barium meal, which was still distributed throughout the large intestine.

Conclusion: There was retention at three and six hours in the stomach on the second examination. There was no hypermotility in the small intestine at three and six hours; the second immediate examination of the stomach showed hyperperistalsis.

Comment.—This patient presented a number of symptoms, which were probably due to food allergy since they were relieved by the elimination of specific foods and recurred with the reintroduction of such foods in the diet. The gastric symptoms were especially disturbing. Pain and soreness in the upper right quadrant associated with definite sallowness of the skin suggestive of a mild icterus indicated possible hepatic allergy. Canker sores and coated gums and tongue are recognized as due to food allergy in certain patients and were relieved in this patient by his "elimination diet."

Because of the patient's limited time in the city it was necessary to conduct his second series of roentgen studies before the barium from his first series had been entirely evacuated. However, the results in this case check with those of the other three and it is reasonable to suppose that the barium retained in the colon had no effect on the gastric function.

The following deviations from the roentgen examinations when the patients were on "elimination diets" which controlled their symptoms were noted when milk or eggs were added to their diets:

1. Gastric retention was observed in each of the four patients. This was marked in three hours and very definite in six hours. In case 1 there was definite evidence of pylorospasm. In the other cases it could have been present to a degree difficult to visualize. In all the cases, and especially in case 3, in which gastro-enterostomy was present, some disturbance in peristalsis interfering with the gastric or intestinal gradient best explains the gastric retention. Such disturbance could be the result of localized or generalized mucosal edema or smooth muscle spasm arising from allergic reactions due to milk or eggs.

2. In each patient, barium was present in the duodenum and jejunum in three and six hours. This was to be expected with the gastric retention and was due to the same causes that were responsible for the residues in the stomach.

3. In case 1, definite hypermotility was observed in three and six hours. It is impossible to say that this was definitely due to allergy. However, diarrhea is not an infrequent manifestation of food allergy in children and in adults.

4. Spastic colons were observed in cases 1, 2 and 3 during the second studies. Such spasm could readily be explained by an allergic reaction of the smooth muscle in the colon. It is my opinion that constipation is frequently due to food allergy resulting from colonic spasm and that when it is accompanied by a mucosal reaction, mucous colitis or an irritable bowel may result.[6]

It is interesting that long standing constipation in case 1 and especially in case 2 was relieved by "elimination diets" only to return when milk and eggs were taken again.

It is my opinion that these conditions with their accompanying symptoms were probably due to food allergy for the following reasons: (*a*) They were absent when milk and eggs were excluded from the diet. (*b*) The symptoms reappeared when milk or egg had been added to the diet for from one to three days. Patient 3 had definitely determined before consulting me that these two foods along with a few others invariably produced nausea, vomiting and gastro-intestinal soreness for which gastro-enterostomy had been done without relief. (*c*) Such relief and reproduction of symptoms in each patient had occurred on two or three occasions by the withdrawal or taking of these specific foods.

It is realized that doubt may arise about food allergy as the cause of the gastro-intestinal symptoms and roentgen observations.

(*a*) It is possible that the disturbances resulting from the introduction of milk or eggs could be due to impaired digestion. Thus, patient 1 had definite hypo-acidity. However, hydrochloric acid therapy and strong citric acid drinks in themselves were unavailing in the control of his distress. In three patients, large doses of trypsin in capsules coated with phenyl salicylate and strong acid therapy did not make possible the taking of milk without the appearance of the former discomfort. It is realized that milk has a slightly longer gastric emptying time than gruel. However, definite six hour residues have never been a common finding in the thousands of patients who have been studied with the roentgen ray after the taking of barium or bismuth in milk vehicles. Thus, in my opinion, allergy best explains the definite residues that were found in these four patients and even in the one who had a well functioning gastro-enterostomy when on his "elimination diet."

(*b*) It is known that nervousness in its various forms may disturb gastro-intestinal function. However, six hour residues are not commonly observed in patients, many of whom are nervous with their original roentgen studies. All four of these patients, moreover, had had previous examinations, and many studies had been made in cases 2 and 3. Thus it is not logical to suppose that in each of these cases the gastro-intestinal disturbances and especially the gastric retention could have been due to nervous reactions. This explanation of nervousness as a cause of allergic reactions in the gastro-intestinal

6. When the patients were free from their symptoms during their initial roentgen studies, certain deviations from the normal conditions in the gastro-intestinal tract were found. Slight residue in the second and third portions of the duodenum was noted in case 1. Ptosis of the stomach, small intestine and large intestine in case 2 was observed; some reversal of peristalsis in the duodenum probably due to this ptosis was also present, though no symptoms from this ptosis or duodenal disturbance were experienced. In case 3 there was no evidence of ulcer or a malignant condition. However, hypermotility in three and six hours was marked, the barium having progressed well into the sigmoid in three hours and into the rectum in six hours, owing undoubtedly to the large gastro-enterostomy. No definite symptoms were experienced by the patient from such hypermotility. In case 4, moderate hypermotility in the large bowel and lack of definite haustration suggested an irritable bowel, symptoms indicative of which were not present when this patient was on his "elimination diet." It is necessary to emphasize that these abnormal conditions found in the roentgen examinations were not accompanied by any definite gastro-intestinal symptoms and were observed after the patients had been relieved of their original complaints for several weeks by the use of "elimination diets."

tract reminds one of such an explanation of asthma, angioneurotic edema, migraine and other allergic disturbances which unfortunately have held sway until recent years.

(*c*) The fact that definite skin reactions by the scratch and intradermal tests to milk or eggs were not present in any one of these four patients would argue against allergy in the minds of some physicians. Slight erythema and a suggestive wheal to milk were present in two patients, but such reactions are indefinite and of little value. This absence of positive reactions in food sensitive patients has been frequently observed by Alexander, Schloss, myself and others. It is especially frequent in adult patients and particularly in gastro-intestinal allergy, migraine and angioneurotic edema due to food sensitizations. The explanation of this difficulty in demonstrating skin reactions to foods causing allergic symptoms is difficult. It may be due to localized allergy in the gastro-intestinal tract even in definite parts of this tract, or it may be due to a temporary desensitization or a hyposensitization of the cells of the skin. Rinkel recently suggested to me that such negative reactions might be due to a condition similar to that in the skin when patch tests and not scratch or intradermal tests are positive. This difficulty in demonstrating positive skin reactions to foods, especially in adults, to my mind accounts for the long delay in recognizing the frequency of food allergy.

As stated before, these four patients were selected because of their marked gastric symptoms, which had been relieved by the elimination of specific foods without other medical measures. The occurrence of definite gastric retention had not been anticipated. However, moderate six hour retention had been observed in case 4 at my initial examination six months before and in other patients with gastro-intestinal allergy. That such residues had not been observed in the other three patients when they were first studied some months before the present investigations was probably due to the fact that it has been my custom for several years to put my patients suspected of gastro-intestinal allergy immediately on "elimination diets" and to conduct roentgen studies several days after such diets have been started. Moreover, the barium has been given to such patients in corn meal or tapioca gruel instead of in a milk vehicle.

It is my opinion that many mild disturbances in the gastro-intestinal tract arising from food allergy exist in comparison to the marked ones studied in these four selected patients. The roentgen demonstration of such mild dysfunctions might be difficult as compared with those in this study. Moreover, this study has been made on patients with predominating gastric symptoms. It is planned to carry out roentgen studies on a group of patients with colonic disturbances due to food allergy to complement and extend the former report of Eyermann.[2]

CONCLUSIONS

1. Gastric retention arising from probable food allergy has been demonstrated by roentgen studies.

2. Hypermotility and colonic spasticity resulting from such allergy has also been shown by the roentgen ray.

3. Food allergy as a cause of gastric retention and other peristaltic disturbances in the small and large intestine must be kept in mind by gastro-enterologists and roentgenologists.

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POISONING FROM DRINKING RADIUM WATER

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Radioactive salts taken internally in the smallest traces are detrimental to health and fatal to life. This has been definitely proved by the work of Martland and his co-workers,[1] St. George, Gettler and Muller,[2] Hoffman,[3] Castle and Drinker,[4] Flinn [5] and the U. S. Department of Labor,[6] especially in connection with the series of radium watch dial workers in New Jersey.

The case to be described in this paper is interesting because it is the first one on record to be diagnosed correctly as radium poisoning, caused by drinking radium water, and in which the autopsy and analysis of the tissues corroborated the diagnosis.

Fig. 1.—Autophotographic appearance of femur.

From the chemical laboratories of Bellevue Hospital, the Chief Medical Examiner's Office, and Washington Square College, New York University.

1. Martland, H. S.; Conlon, Philip, and Knef, J. P.: Some Unrecognized Dangers in the Use and Handling of Radioactive Substances, with Special Reference to the Storage of Insoluble Products of Radium and Mesothorium in the Reticulo-Endothelial System, J. A. M. A. **85**: 1769 (Dec. 5) 1925. Martland, H. S.: Microscopic Changes of Certain Anemias Due to Radioactivity, Arch. Path. & Lab. Med. **2**: 465-472 (Oct.) 1926. Reitter, G. S., and Martland, H. S.: Leukopenic Anemia of the Regenerative Type Due to Exposure to Radium and Mesothorium, Am. J. Roentgenol. **16**: 161-167 (Aug.) 1926. Martland, H. S.: Occupational Poisoning in Manufacture of Luminous Watch Dials, J. A. M. A. **92**: 466, 552 (Feb. 9) 1929. Martland, H. S., and Humphries, R. E.: Osteogenic Sarcoma in Dial Painters Using Luminous Paint, Arch. Path. **7**: 406-417 (March) 1929.

2. St. George, A. V.; Gettler, A. O., and Muller, R. H.: Radioactive Substances in a Body Five Years After Death, Arch. Path. **7**: 397-405 (March) 1929.

3. Hoffman, F. L.: Radium (Mesothorium) Necrosis, J. A. M. A. **85**: 961 (Sept. 26) 1925.

4. Castle, W. B.; Drinker, Katherine R., and Drinker, C. K.: Necrosis of the Jaw in Workers Employed in Applying a Luminous Paint Containing Radium, J. Indust. Hyg. **7**: 371 (Aug.) 1925.

5. Flinn, F. B.: Radioactive Material an Industrial Hazard? J. A. M. A. **87**: 2078-2081 (Dec. 18) 1926.

6. U. S. Department of Labor Bulletin: Radium Poisoning, 1929.

History.—E. M. B., a man, aged 52, weighing about 110 pounds (50 Kg.), markedly emaciated and anemic, was admitted to the hospital [7] and treated for necrosis of the jaw. He had been drinking a water (said to be "Radithor") for about five years. This water is said to have contained 2 micrograms of radioactive substances in each 2 ounce (60 cc.) bottle, and the patient had consumed about 1,400 bottles.

The patient was in the hospital a few months, and during this time the air he expired was found to be radioactive.[8] Four weeks before death a part of the necrotic jaw was removed by operation. The condition of anemia and emaciation increased continually, and at death he weighed only 90 pounds (41 Kg.).

TABLE 1.—*Total Amount of Radium in Bones and Tissues as Determined by the Emanation Method*

Tissues	Total Weight	Grams Used for Ashing	Per Cent Ash	Grams of Ash From Entire Tissues	Micrograms Ra per Gm. Ash	Micrograms Ra in Entire Body
Femur	...	10.5	51.3	....	0.0092	.....
Vertebrae	...	12.5	50.8	....	0.0342	.....
Rib	...	8.4	51.5	....	0.0039	.....
Jaw bone	...	6.8	44.2	....	0.0076	.....
Teeth	...	1.5	53.4	....	0.0149	.....
Average	...	....	50.2	....	0.0139	.....
Total skeleton	10,500*	....	50.2	5,271.00*	0.0139*	73.27*
Heart	250	50	0.9	2.25	0.0008	.....
Spleen	150	100	0.87	1.30	0.0009	.....
Kidneys	280	145	0.64	1.80	0.0046	.....
Liver	1,200	425	0.80	9.60	0.0012	.....
Lungs	600	540	0.82	4.92	0.0008	.....
Muscle, blood and remaining tissues	28,000*	...	....	224.24*	.....	.....
Average	...	...	0.8	....	0.0016	.....
Total soft tissues	30,480*	...	0.8	244.11*	0.0016*	0.39*
Total micrograms Ra in entire body						73.66*

* Estimated.

The autopsy [9] revealed necrosis of the jaw bones, swollen kidney cortex, cerebral abscess of the right temporosphenoidal lobe, moderate coronary sclerosis, moderate nodular sclerosis of the aorta, and marked hyperplastic bone marrow (regenerative type) (bright red bone marrow). The cause of death was necrosis of the jaw, abscess of the brain, secondary anemia and terminal bronchopneumonia. In order to prove the nature of the poison causing these conditions the heart, liver, lungs, spleen and kidneys, and portions of the femur, vertebrae, ribs, jaw bone and teeth were taken for analysis.

Fig. 2.—Radioactivity shown by jaw bone.

Preparation of Tissues.—The separate portions of the tissues as removed from the body were weighed and then ashed in an electric muffle. The ashes thus obtained were weighed, and the percentage of ash then calculated. The total weight of skeleton, muscle, blood and the like was estimated. All values obtained are given in table 1. The various ashes were examined by means of the electroscope.

7. Doctor's Hospital, New York, Service of Dr. Joseph S. Wheelwright.
8. Tests on expired air were made by Dr. F. B. Flinn of Columbia University.
9. Autopsy was performed by Dr. Charles Norris, chief medical examiner of New York City.

Electroscopic Tests.—The Lind electroscope was used throughout this work. The normal leak was first determined, by averaging several readings, and found to be 2,880 seconds for ten divisions on the scale. The bone and tissue ash were now successively introduced into the lower chamber of the electroscope, and the time for a ten division leak was determined. The time of leak was always read with the electroscope leaf between 6 and 8 of the scale, making the several readings strictly comparable. The results are indicated in table 2. The figures show an enormous reduction in the leakage time, produced by the bone ashes, indicating that they were strongly radioactive. The leakage time for the ashes of the soft tissues was much less; but still a decided decrease over the normal leak, indicating that the soft tissues also contained some radioactive substance. Bone and tissue ashes of nonradioactive cases gave practically the same values as the natural leak.

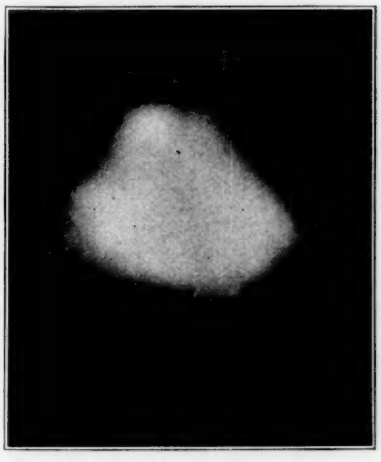

Fig. 3.—Image of vertebra.

Photographic Method for Detection of Radioactivity.—All operations were conducted in a dark room. The photographic films were wrapped and sealed in black photographer's paper. The various bone and the tissue ashes were placed on these films and were allowed to remain standing in this manner for ten days. After this period the films were developed and printed. The results are shown in the accompanying reproductions of the autophotographs. The images thus obtained are due to the beta and gamma rays emitted by the radium present in the bones and tissues. All the bones of this case, examined by the photographic method, showed that they were strongly radioactive. The soft tissues were only weakly radioactive.

TABLE 2.—*The Electroscopic Leaks Obtained for Bone Ash and Soft Tissue Ash*

Material Tested	Grams Used	Leak in Scale Division	Time in Seconds
Normal leak	Control	10	2,880
Femur	5.0	10	95
Vertebrae	6.0	10	24
Rib	4.0	10	268
Jaw bone	2.5	10	76
Teeth	0.5	10	255
Heart	0.2	10	2,360
Spleen	0.8	10	1,870
Kidneys	0.8	10	1,980
Liver	0.8	10	1,650
Lungs	0.8	10	1,400

Quantitative Determination of Radium Content of Bones and Tissues.—The Lind electroscope, which was used for the measurements, was calibrated by the emanation method.

A sample of carnotite ore weighing 1 Gm. and containing 1.51 per cent of uranium was placed in a 200 cc. round bottom flask into which 100 cc. of 1:1 nitric acid (saturated with barium nitrate) was added. The contents of the flask were then boiled, so as to expel all the emanation. With the content of the flask still at the boiling temperature, the flask was sealed, and the emanation was allowed to collect for a period of one week. After this time, the sealed flask was connected with a purifying train (to remove carbon dioxide, acid spray, and moisture) and the emanation was driven over into a previously evacuated ionization chamber. The emanation was allowed to stand in the chamber for three hours before measurements were begun, in order to allow it to come to equilibrium with its surroundings. The electroscope head was then mounted

on the ionization chamber and charged for fifteen minutes at 135 volts, and the rate of leak was determined. The average of several determinations gave 14.2 seconds for a ten division leak. Since the natural leak of the instrument is about 2,880 seconds per ten divisions, the latter is of no significance as a corrective factor.

Fig. 4.—Strong radioactivity shown by teeth.

Since the ore contained 1.51 per cent of uranium, the amount of uranium present was $1 \times 0.015^{1} = 0.0151$ Gm. of uranium.

The ratio of radium to uranium, that is, the amount of radium element in equilibrium with 1 Gm. of uranium, is accurately known, and has the value:

$$Ra/U = 3.33 \times 10^{-7}$$

It is known, however, that only 97 per cent of this amount gives off emanation, so that the corrected amount of radium equivalent to the aforementioned sample and measured as stated is:

$$\text{Radium} = 0.0151 \times 3.33 \times 0.97 \times 10^{-7}$$
$$\text{Radium} = 4.9 \times 10^{-9}$$

This amount of radium, then, gives the observed leak of ten divisions in 14.2 seconds.

One gram samples of ash, when available (otherwise smaller samples), were treated exactly the same as was the carnotite ore in the calibration. The rate of leak was determined in each case. From the calibration just described, it was found that 4.9×10^{-9} Gm. of radium causes a ten division leak in 14.2 seconds. Hence the radium content of this series was calculated by the following equations:

$$\frac{14.2}{\text{Leak time for 10 div. in sec.}} \times \frac{1}{\text{Wt. taken in Gm.}} \times 4.9 \times 10^{-9} = \text{Gm. Ra per Gm. of ash,}$$

or

$$\frac{14.2}{\text{Leak time for 10 div. in sec.}} \times \frac{1}{\text{Wt. taken in Gm.}} \times .0049 = \text{micrograms Ra per Gm. of ash.}$$

Table 1 shows the radium content of the bone ashes and tissue ashes as determined by this method. The total amount of radium estimated to be present in the entire body was 73.66 micrograms.

The history of this case, the symptoms developed, the postmortem studies and the physicochemical analyses clearly indicate that the radium present in the water consumed was directly responsible for the patient's death.

It might be questioned why more such cases as this one have not come to light. The answer lies in the following: First, radium water (that is, water actually containing traces of radium salts) are a little expensive and therefore cannot be used daily, for years, as a drinking water, except by the wealthy; and, second, the symptoms of radium poisoning are at present still little known by the average physician, and therefore the correct diagnosis is not often made.

SUMMARY

This paper presents the first case on record of fatal poisoning from the consumption of water containing traces of radium salts in which the presence of radium in the bones and tissues was definitely proved by scientific laboratory procedures.

Death was due to pathologic lesions brought about by the radium, which entered the system, by drinking water for a few years, which was said to contain 2 micrograms of radium in every 2 ounces (60 cc.) of water.

The presence of the radium was proved by both the electroscopic and the photographic method.

The quantity of radium in the bones and soft tissues was determined by the emanation method.

The entire skeleton contained 73.27 micrograms of radium, the soft tissues only 0.39 micrograms. The total amount of radium, therefore, in the entire body was 73.66 micrograms.

Radium salts (or radioactive substances in general), when introduced into the blood stream, become detrimental to health and fatal to life, and therefore the use of foods or beverages containing radium salts should be prohibited.

First Avenue and Twenty-Ninth Street.

CHRONIC SINUS DISEASE

ITS PRESENT STATUS

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The afflicted public and many of the profession feel that the management of chronic sinus disease is a failure. The public has been forced to this conclusion by multiple sad experiences and the physician to the same attitude by repeated disappointments. The phrase "once a sinus operation, always a sinus operation" is an axiom heard in every part of the country. This

Fig. 1.—Marked chronic inflammation; cystic degeneration of the gland.

fact results in frequent adverse advice from the general physician and is a challenge to every specialist in the profession.

The intimate etiologic relation of chronic sinus disease to the general manifestations of chronic infection, its extreme importance in the proper management of chronic bronchitis, and its frequent origin of bacterial

allergens producing asthma, to say nothing of local symptoms, demands a clear statement to the general profession of what can be done and a change of attitude on the part of many special practitioners which will permit them to accomplish these results.

Fig. 2.—Chronic inflammation; glandular hyperplasia; cystic degeneration of glands.

A definition of what constitutes a clinical cure must be agreed on before results can be compared, with either the acceptance or the discarding of methods of management.

Many special practitioners regard the abatement of local symptoms and the consequent pleasure of the patient as such, but this does not meet the requirements. Jansen [1] stated thirty years ago that "a cure does not at all coincide with the removal of symptoms and complaints which frequently disappear with a few irrigations. There are many cases in which irrigation through the maxillary ostium will show no pus for several days, while surgery will reveal pus pockets with thick granulation tissue." This observation applies to all of the sinuses.

Chronic sinus disease is not in the nose but in the sinuses. The drainage of various character, the polypi and vascular changes presenting in the nose, are only the local manifestations of the underlying disease. The attack must be changed from the varied procedures against these results and directed toward the underlying cause. The ideal cure obviously demands the restoration of normal condition and function, but this is too much to exact in any long standing chronic infectious process. It can be closely approximated, however. A clinical cure demands the thorough and complete removal of this underlying pathologic condition with the minimum of disturbance of function and the normal appearance of the patient. It presumes the complete eradication of infection with its contribution to remote signs and symptoms and the absence of local manifestations.

The problem of meeting these requirements, either medically or surgically, has not been a simple one. This has been due partly to the anatomic location of the disease and the reticence of both patient and physician to undertake the necessary management, and, partly, to the failure of the physician to appreciate properly the underlying pathologic changes. Figures 1 to 7, inclusive, are a few examples of pathologic sinus linings that could not be restored to normal by any type of treatment.

These factors have been augmented by the teachings and dicta of practitioners in positions of authority who have constantly counseled "conservative measures" in attacking the sinuses, despite their unsatisfactory results, the constant advice "to remove only the obviously diseased portions" of this sinus lining and not to disturb the lining of another sinus at all because of possibilities that are far more imaginary than real.

The proper attack of all the diseased tissue has been termed "radical"—a term that has been and is unfortunate in that it has and does prevent the majority of operators from considering their problem with understanding and fully meeting its requirements.

Consequently, much attention has been directed to intranasal methods with the development of excellent technic for the satisfactory management of many subacute or early chronic conditions that require only adequate drainage for their resolution. It must not be understood that I am discussing this type of lesion but, rather, those cases which have resisted sufficient intelligent intranasal treatment to effect a cure and whose pathologic changes are of such a nature and so advanced that no type of management can effect their return to normal. The number of these cases is legion; they occur all too frequently in the experience of every practitioner.

It is this type of case which demands that the practitioner abandon the many intranasal practices and so-called conservative radical procedures which do not permit him to operate under direct vision and consequently preclude adequate and thorough accomplishment of the purpose of his operative management. No operator, however skilful, using these intranasal methods, can enter all the ethmoid cells in many cases nor would he be so bold as to claim more than increased drainage in a frontal sinus. He cannot safely remove the pathologic linings of the superiorly placed ethmoid cells or the diseased tissue about the cribiform plate.

Fig. 3.—An old chronic inflammation; marked fibrosis replacing ordinary lining structure.

1. Jansen, A.: Operative Treatment of Suppuration of the Frontal Sinus, Proc. Acad. Med., 1904.

The failure to do these things spells disaster in some and continuance or recurrence of the symptoms in most of these cases. The specialist frequently attempts to complete with postoperative treatments in his office that which he should have accomplished in the operating

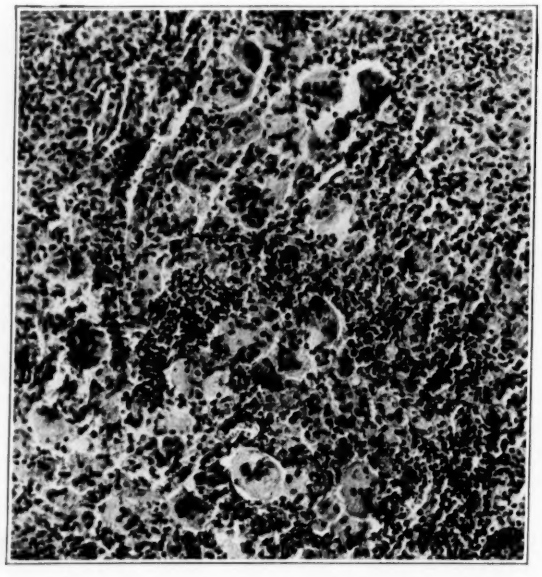

Fig. 4.—Abscess. Intensive infiltration and numerous giant cells are shown.

room. He must follow some procedure which permits him to see clearly every vestige of diseased tissue and to deal with it accurately and safely. This must be accomplished without deformity and with neither functional nor cosmetic disability. Such a procedure demands a direct approach and a practically bloodless field.

Fig. 5.—Old chronic inflammation; cholesterol crystals resulting from degenerating epithelium.

The following is a typical example of this type of case. The patient was convalescing in my service at the time this was being written:

R. F. Y., a man, aged 51, a prominent lawyer in a Southern city, was presented for operation by his rhinologist with a statement that he had had ten intranasal operations with continued recurrence of his complaints. Four of these had been performed by the most skilled operators in the country. Within four weeks he had been returned from one of the best clinics in the country with the statement that his ethmoid labyrinth was completely exenterated and that he had no sinus trouble. It was the opinion of the consultant that he was suffering from a "sphenopalatine ganglion neurosis" and he advised rest and a specified diet.

The patient was suffering from pain so intense that he was getting morphine, one-half grain (0.03 Gm.), three times a day, and threatening suicide if not relieved.

He was operated on under local anesthesia by the direct method to be described. Five flat, slitlike periorbital ethmoid cells containing pus were exenterated, an infected, thick (one-eighth inch) sphenoid lining was removed and a frontal sinus containing thick pus and a pyogenic membrane was completely managed. The posterior wall of this sinus presented an area of bone erosion three-eighths inch in diameter.

The pain has subsided and the patient is making a rapid recovery.

All this could and should have been accomplished in the first instance. This is no criticism of the operators but rather of the method of procedure. Every surgeon

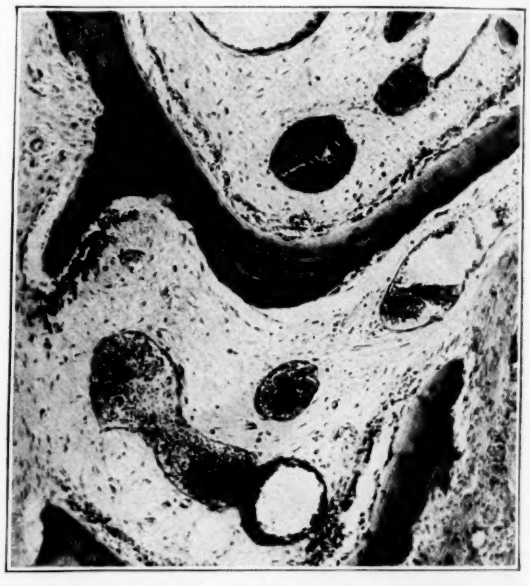

Fig. 6.—Chronic periostitis; osteitis of the ethmoid and turbinal; fibrosis.

recognizes the dangers of a complete operation high in the nose and would prefer to discharge patients living with an incomplete operation than risk the fatal outcome of attempted completion of the effort. More important than this is the anatomic impossibility of reaching all of the involved area by the intranasal approach.

Would it not be safer, saner and better judgment to approach such a situation directly in a practically bloodless field that is under full vision than to follow this universally common practice of attempting to work from below upward into a dangerous area in the presence of more or less free bleeding and with the certainty that the most skilled effort cannot thoroughly clear the area of disease? Is it "radical" to accomplish a completed piece of surgery which produces almost 100 per cent of favorable results in a single procedure, or would it be more accurate to call this a complete sinus operation?

The fact remains that this type of operation almost invariably produces a satisfactory result when its

various details are scrupulously observed. The patient is operated on with a minimum of risk and inconvenience; the procedure is painless and practically bloodless; the field may be rendered scrupulously clean; convalescence is comfortable and brief, and, finally,

Fig. 7.—Intense chronic inflammation and periostitis of the middle turbinal.

there are no permanent disabilities and rarely any recurrences of the original complaint.

The special surgeon must follow such a management if he is to regain the confidence of the laity and regain the unqualified support of the consultant who needs his services in the relief of a large group of patients.

Jansen,[2] as an assistant in the clinic of Lucae, in 1894, described the cardinal principles and the technic for this procedure. Ritter [3] described twelve years later a technic that is practically identical. Neither of these procedures apparently appealed to the specialists of this country. Arnold Knapp [4] described in detail the successful management of this and other cases by this method in 1899, but this made only a transitory impression.

It remained for the late Robert Lynch [5] of New Orleans to become discouraged with the accepted management of chronic sinus disease and to adopt the technic described by Knapp as originating with Jansen. He made some refinements in it and undertook a vigorous campaign of education among his friends and colleagues. He based his claims on a considerable series of results of his own and those of his friends. He did more than any other to arouse an interest in this method of complete management.

Sewall [6] published an excellent survey of this entire situation in 1926 and clearly described the existing technic with the addition of several essential refinements. He considerably shortened the skin incision of Jansen and his successors to improve the cosmetic appearance. Even more important, he described a method of ligating the ethmoidal and sphenopalatine vessels to render the intranasal field practically bloodless. He also emphasized the necessity of removing as much of the sphenoidal floor as possible to prevent scar formation with obstruction of drainage.

My associates and I have made some additions to the procedure and developed instruments to expedite its execution. We follow, however, the general management as described by Sewall and his predecessors:

1. The eyelids are closed with horsehair sutures to protect the cornea.

2. The soft tissue of the side of the nose from the eyebrow downward for an inch and from the inner canthus to the ridge of the nose is infiltrated with 0.5 per cent procaine hydrochloride containing epinephrine.

3. The nose is packed with cotton pencils wrung out of a solution of 10 per cent cocaine in 1:2,000 epinephrine hydrochloride.

4. A curved incision, in the skin, three-fourths inch long, is begun immediately below the eyebrow and carried downward around the inner canthus of the eye at a point one-fourth inch mesial to it. This exposes the apposition of the orbicularis palpebrarum and quadratus muscles. These muscles are dissected to expose the vessels of the lid connected with the angular vessels. These palpebral vessels are cut and ligated between two forceps. The internal canthal ligament is also exposed. The periosteum is incised along a similar line and elevated from the lateral border of the incision until the lacrimal sac is exposed. This is carefully separated from its ligamentous attachment and dislocated downward.

5. The separation is continued into the orbit until the posterior ethmoid vessels and nerve are exposed and is carried above and below until the entire floor of the frontal sinus and the lamina papyracea are exposed.

We disregard the anterior ethmoid vessels because we have never seen more than two or three drops of bleeding from their section in several hundred cases.

Fig. 8.—A ligature passed around the posterior ethmoid vessels, which are seen in the depth of the incision, is held by the point of the forceps.

6. At this point a self-retaining retractor is introduced to expose clearly the field and the posterior ethmoid vessels and nerves. The nerve is anesthetized by a few moments application of 10 per cent cocaine on an applicator (fig. 8).

7. The vessels are ligated after the method described by Sewall and incised at the bony foramen. It is only rarely that the distal end bleeds more than a few drops, but the most

2. Jansen, Albert: Arch. f. Laryngol. u. Rhinol., 1894, pp. 135-157.
3. Ritter, Gustav: Deutsche med. Wchnschr. **32**: 1294, 1906.
4. Knapp, A. H.: Arch. Ophth. **28**: 50-54, 1899.
5. Lynch, R. C.: The Technic of a Radical Frontal Sinus Operation, Laryngoscope **31**: 1 (Jan.) 1921; The Technic of a Pan Sinus Operation, South. M. J. **17**: 289 (April) 1924; Ethmoidal Sinusitis; External Radical Approach, Tr. Am. Acad. Ophth. **34**: 438, 1929.
6. Sewall, E. C.: External Operation on the Ethmosphenoid Frontal Group of Sinuses Under Local Anesthesia, Arch. Otolaryng. **4**: 377 (Nov.) 1926.

troublesome case may be controlled by pressure in a few moments.

8. The mesial orbital wall is perforated through the lacrimal fossa or immediately behind it with a sharp perforator large enough to admit Hajek punch forceps, with which the opening is further enlarged. Specially designed heavy punch forceps

Fig. 9.—The posterior margin of the nasal process of the maxilla and the lateral walls of several ethmoid cells have been removed. The hyperplastic content of these cells is of especial note.

remove enough of the posterior margin of the nasal process of the maxilla to permit a complete removal of the most anterior cell and afford a clear view (fig. 9).

9. The lamina papyracea is now removed with Gruenwald punch forceps, leaving a wall three-sixteenths inch high along the orbital floor when the condition of the bone permits. The same forceps introduced through the nostril remove the major portion of the ethmoid cells and leave the lateral wall of the middle turbinate clearly exposed.

10. A Sluder ethmoid knife is now inserted gently between the septum and the middle turbinal and raised to the level of the cribriform plate. It is turned laterally to fracture the turbinal slightly toward the orbital wall. The punch forceps are now introduced with the female blade along the cribriform plate, and the middle turbinal is punched away without tugging or tearing.

11. The remnants of ethmoid cells are completely removed with punch forceps and the nasal roof completely freed of covering membrane by the use of small gauze balls instead of metal curets. Every vestige of membrane must be cleared away and the bone left scrupulously clean. Any adherent shreds will be freed by a solution of 5 per cent trinitrophenol in 35 per cent acetone, which is thoroughly applied to the entire operated area.

12. One now deals with the sphenoid sinus, which is clearly exposed to view. A Sluder knife is introduced into the ostium and the opening enlarged laterally to admit punch forceps. Only once in several hundred cases have we found it necessary to use a chisel to enter this sinus.

The anterior wall is completely removed from the roof to a point about three-sixteenths inch above the floor. The mucoperiosteum containing the sphenopalatine vessels is now separated from this remnant of the wall and the floor of the sinus preparatory to the removal of as much of the floor as possible.

We are reticent about ligating the sphenopalatine artery when both sides require operation because we had a case in which there was septal necrosis, sepsis and an unfortunate outcome. We do, however, ligate and incise this membrane near the midline when its separation from the sphenoidal floor and the posterior part of the septum does not afford access for proper bone removal or its presence threatens drainage.

The lining is now completely removed with a dull separator and small balls of gauze. If it resists this management, as is frequently the case, the cavity is packed for a few minutes with gauze soaked in the trinitrophenol solution, after which the membrane is readily separated. The only exception is the membrane in pterygoid pneumatizations, of which we have seen 16 examples in more than 500 cases.

The cavity is thoroughly swabbed with the trinitrophenol solution and the covering membrane, if it has been incised, is folded around the lateral sphenoid wall and the remaining floor to prevent granulation and to furnish its lining.

13. The frontal sinus is now entered in the region of its normal opening and the entire floor removed with punch forceps and rongeurs. The angle formed by the junction of the two tables is beveled so that no crevices remain. The lining and superior bony wall is treated in the same manner as the sphenoid.

Only rarely has it been necessary to enlarge the incision of the soft parts laterally to permit access to the most extensive sinus. We recognize the existence of frontal sinuses that extend laterally to the malar process, and the like, and would, in such instances, be forced to extend the incision to meet the requirements of a completed operation.

Two points of importance remain. The lining in moderately or abnormally high anterior portions of the sinus may be thoroughly removed without interference with the anterior wall. The cavity is packed with gauze saturated with the trinitrophenol solution for a few minutes to loosen the membrane, regardless of its thickness. Frequently, when fibrosis is marked, it may then be removed *en masse*. In any event, it may be scrubbed out with small gauze balls soaked in the solution and used as a curet. We do not believe that the sharp curet has any place in this procedure. Final inspection with a laryngeal mirror should reveal scrupulously clean bony walls.

Fig. 10.—The skin graft in the depth of the incision is approximated to the soft parts by a rubber tube, which runs from the frontal sinus to the nostril.

Finally, a proper drainage duct for this unobliterated portion of the sinus must be maintained. The attempt to accomplish this with obturators and long continued sounding is futile in most instances.

Bárány utilized a flap taken largely from the upper portion of the septum to cover a portion of the exposed periorbita and

accomplish this purpose. The procedure is difficult, uncertain, mutilating and ordinarily inefficient.

Sewall recommends the preservation of mucosa immediately mesial to his bone opening anterior to the lacrimal fossa. This flap is frequently inadequate in size and consists of membrane that should be removed.

I prefer to introduce a five-eighths inch soft rubber tube from the sinus to a point near the floor of the nose and cover a portion of it to a point above and below the bone opening with Thiersch graft taken from the arm or thigh. The tube is smeared with petrolatum, and the skin, raw surface external, is wrapped round its lateral and anterior walls. Deep horsehair sutures are passed through the skin and muscle to approximate the soft parts to the graft. It adheres to the underlying muscle and periorbita and prevents the adhesion of these structures to the bone margins. We have found occlusion of the duct in only three out of more than a hundred cases. This resulted, of course, from the unusual contraction of the underlying soft parts after the tube was removed on the fourth day (fig. 10).

14. The antrum is managed after a modification of Denker's [7] technic. I described my procedure in April, 1922. I have operated on more than 1,000 patients by this method with very pleasing results to both the patient and myself.

No intranasal dressings are applied in these cases nor is the nose disturbed in any way until the fifth day. At this time secretion is removed by gentle suction which avoids the denuded bone areas. Only a few days of such care is required until the patient is discharged and permitted to complete his own management.

This type of management is not applicable to those patients who present marked involvement of the skull tables forming the frontal sinus. Such cases require the more extensive, deforming management described by Killian.[8]

I have performed in excess of 500 operations by this method with five deaths. Two of these fatalities were of elderly asthmatic patients who died of sudden cardiac failure, one eight hours following operation and one twenty-six hours later. One patient died of necrosis of the septum with marked sepsis. One succumbed to a necrosis of the cribriform plate with secondary meningitis about six weeks following operation. One died of streptococcic meningitis ten hours following operation. I do not feel that the deaths of the latter and the two cardiac patients can properly be charged to the surgical procedure.

I have noted dehiscences of varying size in the sphenoids of seventeen patients and congenital absence of the cribriform plate on both sides in one patient. The dura pulsated freely along the entire length of a slit representing the area of the cribriform plate. I do not regard these areas of exposed dura of as much danger as the freshly exposed dura in the presence of a suppurating mastoid. They have been in long contact with the chronically infected sinus lining and have undoubtedly been sealed to the bone margins by a chronic pachymeningitis.

The majority of these patients complain of postoperative headache, which is readily controlled, from three to thirty days following operation. The average is five days. Likewise, these patients complain of a diplopia, which persists for a similar period. I have had a persistent diplopia in one case for one year but have never had a permanent example of this disability following this procedure.

I noted the recurrence of small polypi in five cases in this group. I feel that this is a reflection on the operator rather than on the operation.

In most of the cases there is freedom from moisture without any postoperative management, and a few patients resist all effort to reduce the excess of mucus.

The cosmetic disability caused by the skin incision is negligible. It is hardly visible in most cases after two months.

SUMMARY

1. The present, generally practiced management of chronic sinus disease is unsatisfactory to both patient and consultant.

2. It is vitally important that the rhinologist follow a management which will afford proper relief in cases presenting general symptoms of chronic sepsis, in those with local signs and symptoms, and in the cases with secondary bronchitis and asthma.

3. The management described is carried out under local anesthesia without pain and with very slight bleeding. The convalescence is short and generally uneventful.

4. The clinical results are, in general, very satisfactory.

Grand Rapids Clinic.

7. Smith, Ferris: Disease and Treatment of the Maxillary Sinus, J. Michigan M. Soc. **21**: 154 (April) 1922.

8. Krauss, Leonhard: Die killiansche Operation chronischer Stirhöhlenenterungen, Arch. f. Laryngol. u. Rhinol. **13**: 28, 1902.

Clinical Notes, Suggestions and New Instruments

BURNS FROM ANESTHESIA MASK STERILIZED IN COMPOUND SOLUTION OF CRESOL

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While burns following the application of compound solution of cresol to the skin are not uncommon, the following case will be of particular interest to anesthetists:

H. S., a white girl, aged 16 years, was admitted to the orthopedic service for treatment of Pott's disease of the spine. An Albee spine graft was to be performed. The patient was anesthetized in the prone position with head resting in the face mask, thus applying a good deal of pressure against the rubber cushion. The anesthesia was of two hours' duration. When the face mask was removed it was noted that there was rather marked erythema of the face where contact had been made with the face cushion. The condition was believed to be due to the length of time during which the contact had been made. However, the condition became worse, with blistering of the skin across the bridge of the nose and on each cheek. The patient was treated by the usual means, but scarring was somewhat keloid in type, requiring roentgen therapy. The scars are distinctly disfiguring in type, one year following the accident.

Investigation of the case revealed that, a week previously, the face mask had been sterilized in about a 10 per cent solution of compound solution of cresol, remaining in the solution over night. A more experienced nurse found the face mask in compound solution of cresol the next morning and recognized the mistake. She washed the rubber cushion in soap suds and hot water and boiled it for ten minutes, after which the face cushion and mask were again placed on the anesthetist's table.

It was doubtless used several times for short cases after exposure to compound solution of cresol and before its use in the case cited. The difference in length of time of exposure and the extra pressure exerted by the weight of the head in the prone position doubtless accounts for the absence of burns in the other cases.

Qualitative tests on portions of the rubber cushion were positive for cresols. To determine definitely that compound solution of cresol may be absorbed by rubber in sufficient quantities to produce burns, the following experiments were performed:

Two previously used rubber cushions were placed in compound solution of cresol (approximately 10 per cent) and one removed after fifteen minutes, the other about twenty hours later. Both were washed in soap suds and hot water, and finally

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boiled for ten minutes. With the usual method for the quantitative determination of cresols there was found present 21.1 mg. in the first cushion and 64.2 mg. in the other. These amounts are certainly sufficient to produce burns.

Undoubtedly the solubility of the cresols in ether, the presence of moisture on the face, and the pressure on the rubber cushion were factors in the passage of the cresols from the rubber, with consequent burning of the face.

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CYSTIC MYOMA OF THE ILEUM WITH INTESTINAL HEMORRHAGE

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The sources of bleeding from the bowel are many, including the relatively common hemorrhage from a bleeding gastric or duodenal ulcer, neoplasm or hemorrhoids. The case here reported illustrates one of the less common causes of intestinal hemorrhage but, in view of the course of events, seemed well worth while reporting.

REPORT OF CASE

M. T. C., a white man, aged 29, was admitted to the Johns Hopkins Hospital, Dec. 29, 1931, with the complaint of persistent blood in the stools. The family history was unimportant, and there was nothing in the past history that had any bearing on the present complaint. A review of the symptoms showed that the patient had never had any gastro-intestinal distress except occasional fulness after eating. There was no history of nausea, vomiting or jaundice at any time. The patient had a congenital clubfoot, and except for two plastic operations he had had no surgical treatment up until the present illness.

The present illness began, March 1, 1929, when, following lunch, the patient felt somewhat weak and a desire for defecation. At this time the patient noted that he passed what apparently were many semisolid blood clots. This was followed by several other definitely tarry stools, and after two days he became very weak and was admitted to a hospital. He was given two blood transfusions on successive days and was put on a Sippy diet. The patient remained in bed for three weeks, with considerable improvement. When he was discharged he was still weak, but apparently there was no evidence of occult blood in the stools. Eighteen months later, after a strenuous game of tennis, the patient had a hemorrhage similar to the first, but not quite as severe. He was again admitted to a hospital, and during a period of observation occult blood persisted in the stools. Nov. 1, 1930, an exploratory laparotomy was done, with gastro-enterostomy. According to the patient's statement, no ulcer was found at this time in either the stomach or the duodenum. The patient did very well following the operation, but again his stools were not entirely free from occult blood. He did very well until Jan. 25, 1931, when again he had a hemorrhage, while visiting in Ireland. He was admitted to a hospital and was put on a six weeks Sippy diet. Serum was also used to control the bleeding. The patient picked up rapidly and gained considerable weight, but when he was discharged from the hospital there was still a trace of occult blood in the stools. His last hemorrhage occurred, Dec. 1, 1931, and was similar to the others except that it was not as extensive. A feature throughout the course of the present illness has been the entire lack of abdominal pain, and only at the time of the hemorrhages has there been any nausea or vomiting, and at no time did the patient vomit blood.

A week before admission to the Johns Hopkins Hospital in December, 1931, the patient's hemoglobin was 58 per cent and he was 20 pounds (9 Kg.) underweight. His best weight was 143 pounds (65 Kg.) in March, 1931; his average weight was 135 pounds (61 Kg.) and, on admission, 115 pounds (52 Kg.).

Physical examination showed rather pale mucous membranes and evidence of moderate loss of weight. The heart and lungs were normal; the blood pressure was 98 systolic, 70 diastolic. Examination of the abdomen revealed a well healed upper right rectus scar. On palpation the abdomen was held rather tense, but no mass could be felt and there was no localized tenderness. The liver and spleen were not enlarged, and there was no evidence of ascites. The only other thing of note was some atrophy of the muscles of the left lower extremity, which had been present since birth. Rectal examination revealed no evidence of either external or internal hemorrhoids. The sphincter tone was good; the prostate was well within normal limits, and no ulcer or mass could be felt. Stool examination, carried out each day from admission to January 11, showed no evidence of occult blood. However, beginning on the 12th of January to the date of operation, February 5, there was persistent occult blood, in spite of the fact that the patient remained on a meat-free diet. The red count remained for the most part between 4 and 4½ million cells; the hemoglobin, 80 per cent plus; bleeding time, three minutes; clotting time, two minutes and platelets, 306,000, with normal retraction of the clot. The two hour phenolsulphonphthalein output was 65 per cent. Non-protein nitrogen of the blood was 36 and sugar 80 mg. per hundred cubic centimeters.

A fractional Ewald test revealed 25 cc. of turbid, whitish fluid; no gross blood; free hydrochloric acid, 0; combined acid, 7; total acidity, 7; occult blood, negative; lactic acid, negative; microscopic examination, negative.

Fifteen minutes: free hydrochloric acid, 13; combined, 23; total acidity, 36.

Thirty minutes: free hydrochloric acid, 18; combined, 30; total acidity, 48.

Forty-five minutes: free hydrochloric acid, 18; combined, 36; total acidity, 54.

Sixty minutes: free hydrochloric acid, 13; combined, 39; total acidity, 52.

Seventy-five minutes: free hydrochloric acid, 24; combined, 27; total acidity, 51.

Ninety minutes: free hydrochloric acid, 28; combined, 26; total acidity, 54.

Fluoroscopic examination of the stomach showed a large prolapsed stomach, very active, contracting vigorously. The pyloric end was deformed as the result of operative intervention. No actual deformity was seen. Films showed a cow-horn type stomach, hypertonic, with good motility, and spastic. There was a defect in the duodenal cap suggesting ulcer. There was slight retention at the end of twenty-four hours.

Proctoscopic examination, February 1, did not reveal anything abnormal. The proctoscope was inserted 22 cm. The mucous membrane was normal throughout. Two small internal hemorrhoids were seen. The feces were tarry. The comment was: "No adequate cause for bleeding found."

Because of the persistent bleeding, which could not be adequately explained and also had not responded to the usual measures, the patient was transferred to the surgical service, February 4, for exploratory laparotomy. The source of the bleeding could not be explained. A duodenal ulcer, which had not been located at the time the gastro-enterostomy was done, was possible. The presence of a marginal ulcer at the site of the gastro-enterostomy was also considered, but there had been an absence of discomfort throughout the course of the bleeding. The possibility of an ulcer lower down in the intestinal tract was also considered, as well as a bleeding intestinal polyp.

With the use of 4.5 cc. of "avertin," supplemented by ether inhalation anesthesia, the scar of the previous operation was excised and the abdomen opened. Careful exploration of the stomach and duodenum did not reveal any evidence of active ulcer or old scar. The posterior gastro-enterostomy was apparently functioning normally, and no evidence of a marginal ulcer could be found. The appendix region was explored. There were numerous adhesions here, and the appendix was removed. On further exploration of the pelvis, a mass the size of an orange was felt in the region of the sigmoid flexure. This was quite hard and fixed and was apparently the obvious source of the bleeding. Because a new incision would have to be made, and the patient had already had considerable manipulation, it was decided to close the abdomen and at a later date explore the mass through a new incision.

The postoperative course of the patient was quite uneventful except for the fact that two hours after operation he passed a large stool, consisting mostly of blood clots. February 29, proctoscopy was done again. No ulceration was seen, but apparently there was pressure against the rectum anteriorly from without, at a level of 15 cm. The impression that was gained, therefore, was that the mass, felt at the time of operation, was outside the rectum or sigmoid.

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The patient's general condition had improved to such an extent that on the 1st of March, under gas, oxygen and ether anesthesia, the lower abdomen was explored. A low left rectus incision was made, and when the abdomen was opened the tumor felt at the previous operation was located, and at this time it was found to be conical, with a nodule about 3 cm. in diameter on its superior-anterior surface. It was dissected free from its attachment to the pelvic wall by blunt dissection and delivered into the wound. It could then be seen that the mass was connected with the ileum and not the large intestine, and the nodule felt was in the attachment to the antemesenteric border of the ileum. The mass was a dull purplish gray, and there was a lumen about 2 cm. in diameter opening from the tumor to the normal small intestine. The mass was resected together with a portion of ileum on either side, and an end-to-end anastomosis was made. On further inspection the mass was found to be between 3 and 4 feet above the ileocecal valve. Following operation, the patient's convalescence was uneventful. It is interesting to note that the stools contained some occult blood through the 5th of March, five days after the operation, after which there was no further blood present. The patient gained back considerable weight, and he was discharged in good condition, March 22, 1932.

SUMMARY

A white man, aged 29, was admitted to the hospital, with the complaint of recurring tarry stools. The family and past histories had no bearing on the present illness. Approximately three years before admission the patient felt faint, soon after which he passed a large stool consisting mostly of blood clots. He was treated medically but, after a period of months, had a second hemorrhage. Soon after the second hemorrhage the patient was operated on, at which time a posterior gastroenterostomy was done, presumably for a bleeding gastric or duodenal ulcer. The recovery from the operation was satisfactory, but on discharge from the hospital there was still some occult blood in the stools. Following another hemorrhage the patient was admitted to the hospital, Dec. 29, 1931. Examination revealed nothing on which a definite diagnosis could be based. Because of the persistence of blood in the stools, a laparotomy was done, Feb. 5, 1932, at which time a normal stomach and duodenum were found, and a posterior gastroenterostomy without evidence of marginal ulcer. Also at this time a mass was found in the pelvis, presumably in the sigmoid flexure. After the patient had recuperated from this operation, March 1, the abdomen was explored through a low left rectus incision, and the tumor, which was found to be in the ileum about 3 feet above the ileocecal valve, was removed. Convalescence was uneventful, and the patient was discharged in good condition, with stools free from occult blood.

PATHOLOGIC REPORT

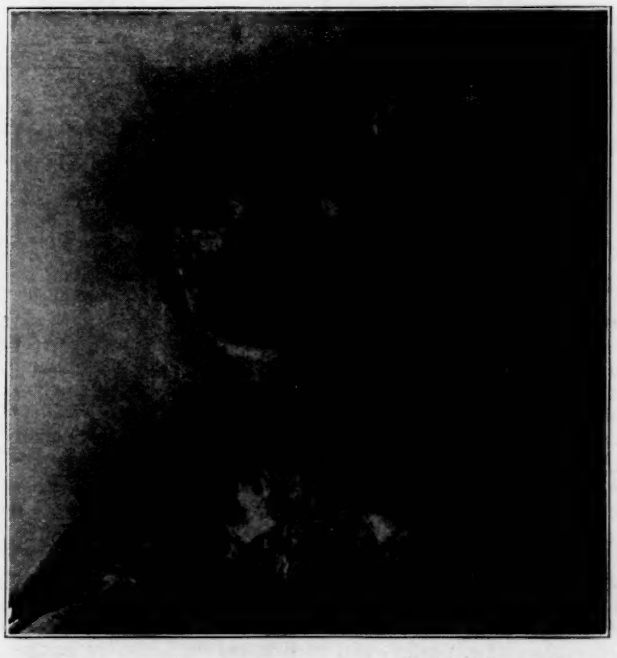
Gross Examination.—A piece of small intestine about 14 cm. in length, with a small piece of the mesentery attached, was examined. On the surface of the intestine opposite the mesentery there was a large polypoid tumor mass, which measured 7 by 6 by 5.5 cm. This mass was roughly pyramidal and was attached to the intestine by a rather thick stalk measuring 4.5 by 2.5 cm. When the small intestine was injected, no fluid was found to pass into the large tumor, which was for the most part cystic in nature, and no fluid could be squeezed out of the tumor into the lumen of the intestine. The tumor superficially resembled a large Meckel's diverticulum.

When the small intestine was opened it was found to be normal up to the point at which the neck of the tumor was encountered. Here there was a projection into the lumen of the intestine, of a very firm yellowish-white tumor measuring 4.5 by 2.5 cm. The mucosa of the intestine over this projection was thickened and there was evidently a chronic ulceration in this projecting mass. No connection from the intestine to the cyst, which was filled with a dark reddish fluid, was found. Block 1 was taken through the thick apex. Block 2 was taken through the hard tumor mass and showed normal intestinal mucosa running on to the tumor. Block 3 showed tumor attached to the wall of the cyst. Block 4 was a piece of the cyst wall and contained a white nodule.

Microscopic Examination.—Section 1 showed a cyst wall made up of flattened, rather broad strands of a dense connective tissue. In this cyst wall there was no evidence of misplaced gastric mucous membrane or aberrant pancreatic tissue. There were a few round cells near the inner edge of the cyst wall. The lumen of the cyst was filled up with red blood cells and fibrin which suggested blood clot. Nothing else was seen except a few large cells.

Section 2 showed fairly normal mucosa of the ileum running out to the tumor. As the muscular coat of the intestine neared the tumor, it broadened out and extended into the tumor mass. The mucosa of the bowel, as it ran on to the tumor, was apparently somewhat thickened and showed evidence of necrosis. Many of the cells were vacuolated and resembled goblet cells. There was a definite cellular infiltration into the lower layers of this thickened mucosa. This mucosa seemed rather peculiar and out of place in this situation. It showed some resemblance to colon mucous membrane, and suddenly the mucosa came into a rather deep ulcer, the base of which was infected. Beneath this infected layer the tumor proper was seen, which consisted of strands and whorls of smooth muscle tissue. The nuclei stained rather deeply. The cells were long and spindle shaped. Mitotic figures were not very prominent. It had all the appearances of a myoma.

Section 3 showed the tumor running on to the wall, and showed nothing very different. One could see the main body of



Cystic myoma of ileum, strongly suggesting Meckel's diverticulum.

the tumor made up of smooth muscle, and overlying this tumor was a dense band of connective tissue, which came up to form the wall of a cyst. There were areas of degeneration in the myoma. No misplaced pancreatic tissue or gastric mucosa were seen in this section. The tumor did not impress one as being of malignant nature. It apparently was not invasive and showed very few mitotic figures.

Section 4, which was more of the cyst wall, showed a thick band of connective tissue overlying a necrotic area in which nothing remained but strands of hyalinized connective tissue and the wall of the vessels.

The final diagnosis was myoma of the ileum, with cystic degeneration and hemorrhage.

COMMENT

The two points of particular interest in this case are, first, the difficulty of making a correct clinical diagnosis and, second, the speculation as to the correct pathologic diagnosis. In reviewing the clinical history, the significance of the absence of abdominal distress, which is so common at some time or other in the history of gastric or duodenal ulcers, was apparently not appreciated. This was true to the extent that an exploratory laparotomy was done with a needless gastroenterostomy, and the true source of the hemorrhage was not

located at this time. The pathologic diagnosis, as given, is myoma of the ileum. There are a number of points, however, that suggest that the main tumor mass consisted of a Meckel's diverticulum, with the secondary formation of myomas in the wall. This contention is borne out by the location of the tumor mass about three feet above the ileocecal valve, and its position on the free border of the intestine. It is true that no mucosa could be found lining the cyst, even after careful microscopic search, but the wall had been so thinned out by pressure from within that it would be impossible to determine whether or not there had been present the normal intestinal mucosa, or possibly some aberrant gastric mucosa. The appearance of the tumor at operation suggested a Meckel's diverticulum.

CONCLUSION

To the commoner causes of intestinal bleeding should be added the possibility of hemorrhage from a benign tumor of the intestine, or a Meckel's diverticulum. This possibility should be seriously considered, particularly in the absence of abdominal distress, when other obvious sources of bleeding can be ruled out.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

H. A. CARTER, Secretary.

REPORT TO THE COUNCIL ON PHYSICAL THERAPY ON HELIOTHERAPY METHODS IN SOME EUROPEAN SANATORIUMS

W. W. COBLENTZ, PH.D.
WASHINGTON, D. C.

While en route to the second International Congress on Light,[1] which met in Copenhagen in August, 1932, I took the opportunity to visit various heliotherapy stations in Europe in order to learn what is being done regarding the estimation and standardization of the dosage intensity of ultraviolet radiation used in the treatment of disease.

The institutions visited were as follows: in France, Dr. J. Saidman's Institute of Actinology in Paris and his Rotating Solarium in Aix les Bains; in Switzerland, the cantonal hospital (Dr. A. Rosselet) in Lausanne, several of Dr. Auguste Rollier's sanatoriums in Leysin, the cantonal hospital (Dr. Stoeklin) also the Physical-Meteorological Observatory (Dr. W. Mörikofer) in Davos, and the Light-Climatic Observatory (Dr. P. Götz) in Arosa; in Germany, the Institut für Strahlenforschung (Dr. W. Friedrich) in Berlin, the Meteorological Observatory (Dr. Süring) at Potsdam, and the Lichtforschungsinstitut (Dr. F. Dannmeyer) at Hamburg; in Denmark, the Finsen Institute (Dr. A. Reyn) at Copenhagen, the Minkerup Coast Sanatorium, the hospital at Odense, the Julemaerke Sanatorium, on Kolding Fiord and the Vejlefiord Sanatorium (Dr. J. Gravesen); and in London the National Institute for Medical Research.

As was anticipated before going, excepting in minor details, European methods of light therapy are not essentially different from those practiced in this country. In general, patients suffering from pulmonary tuberculosis are not given treatments with ultraviolet rays. But the ultraviolet sunlight treatment of surgical cases of tuberculosis is successful, especially at the high altitude stations in Switzerland.

For treatment with artificial sources of radiation, some of the smaller hospitals use portable carbon arc and mercury arc lamps. In one hospital there was an installation of four or five horizontal mercury arc lamps in long rectangular reflectors placed round a circle. At a distance of about a meter in front of the lamp a white line was painted on the floor, and the patients follow along this line to the tune of phonograph music.

In general, the mercury arc lamp is considered "too cold" and in at least one German hospital there is an installation consisting of quartz mercury arc lamps and high-powered, gas filled, tungsten filament lamps, which combination simulates more nearly natural sunlight in total radiation.

The high altitude solariums in Switzerland depend principally on natural sunlight for the treatment of surgical cases of tuberculosis with light rays. In one institution, when there is no sunlight, the affected part (e. g., the knee) is exposed to infrared radiation. Instead of the fancy, expensive lamps sold to the medical profession, numerous ordinary 500-watt electric lamps (in common use for heating rooms, and costing only the equivalent of a few dollars) are used by individuals. For this purpose the lamps are provided with clamps for attachment to the beds.

In the sanatoriums in Denmark, where there is less sunlight than in the countries mentioned, considerable dependence is placed on artificial ultraviolet radiation. The equipment appears to be standardized, consisting of 30-ampere vertical, bare, carbon arc lamps, hung in groups of three, longitudinally, between two couches. This permits the simultaneous treatment of two persons by each two-couch, three-lamp, installation. In one sanatorium, two long rooms are set aside for light treatments. For this purpose there are several dozen carbon arc lamps, each one of which is adjusted for voltage by an electrician, at a central switchboard, provided with voltmeters and rheostats.

The sunporches of the sanatoriums usually face south or southeast, and, at least in some of the mountain sanatoriums, the exposure of the patient is begun soon after sunrise, which is thought to be especially beneficial after the period of darkness and rest. But no exposures are made during the heat of the noon and afternoon hours. In this respect, as already stated, the procedure is much the same in all countries.

Some of the foregoing summary is, of course, common knowledge to many of the practicing heliotherapists, and the main purpose in giving it is to form a background for a consideration of the relative importance or unimportance of attempting to standardize the dosage intensity of the source of radiation used in phototherapy.

Excepting one small solarium, which is provided with pyrheliometers for measuring the total incident solar radiation intensity, I saw no systematic equipment for measuring the dosage intensity, though one institution had a dosage meter on hand, but it was not used.

The general dosage procedure is empirical, based on the attending physician's general experience and on the reaction of the particular patient undergoing treatment.

This personal observation of the reaction of each patient is, after all, an important procedure that cannot be delegated to an inanimate dosage meter. If the patient loses appetite, shows fatigue, or gives other indications of overexposure, however slight, the attendant notes the condition and varies the light treatments accordingly.

While an inanimate measuring instrument (especially if it is an integrating device that gives the total amount of ultraviolet radiation received during periods of sunshine and clouds) would be a useful adjunct in giving such treatments, it cannot displace the personal interest of the attendant. Furthermore, I have seen patients who would inform the attendant when the exposure was becoming fatiguing.

From the point of view of the biophysicist seeking information and data to form a basis for a specification of a unit of dosage of ultraviolet radiation, it is evident, from the foregoing exposition of the case, that, while an inanimate dosage meter will be desirable as an adjunct in phototherapy, it cannot entirely displace the personal attention that is given by an experienced attendant.

However, the inanimate meter would be helpful in case the attendant should happen to be inexperienced or negligent, especially when using artificial sources of radiation, differing widely from the sun in total output and in spectral range of ultraviolet emitted. In this connection the specification of the dosage intensity of ultraviolet radiation should receive early attention, and in arriving at such a specification the personal experience and empirical rules of the attendants will be of great value.

I would add that my ultraviolet measurements (published in the Bureau of Standards Journal of Research, January, 1933) and my conferences with heliotherapists in Europe, during the past summer, indicate that the specification of minimum intensity of ultraviolet radiation necessary to insure effective therapeutic action, adopted by the Council on Physical Therapy, appears to be a fair appraisal of the data relating to this question as it is understood today.

2737 Macomb Street N.W.

1. Report in Science **76**: 412 (Nov. 4) 1932.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

P. N. LEECH, Secretary.

DIPHTHERIA TOXOID (See New and Nonofficial Remedies, 1932, p. 382).

United States Standard Products Company, Woodworth, Wis.

Diphtheria Toxoid-U. S. S. P.—Prepared from diphtheria toxin whose L+ dose is 0.2 cc. or less by treatment with 0.3 to 0.4 per cent formaldehyde at a temperature of from 37 to 40 C. until its toxicity is so reduced that injection of five human doses into guinea-pigs causes no local or general symptoms of diphtheria poisoning. The product is tested for antigenic potency by injection into at least ten guinea-pigs of one human dose each; if at the end of six weeks at least 80 per cent of the animals survive for ten days the injection of five minimum lethal doses of diphtheria toxin, the toxoid is considered satisfactory. The product is standardized to contain in 2 cc. enough of the toxoid for one immunization treatment. Marketed in packages of two 1 cc. vials; in packages of twenty 1 cc. vials; in packages of one 6 cc. vial; in packages of one 20 cc. vial; and in packages of one 30 cc. vial.

LIQUID PETROLATUM (See New and Nonofficial Remedies, 1932, p. 245).

The following dosage form has been accepted:

Maltine with Mineral Oil and Cascara Sagrada: A mixture of liquid petrolatum, 40 cc., and maltine, 60 cc., containing a non-bitter extract of cascara sagrada representing 2.2 Gm. of cascara sagrada per 100 cc. Maltine meets the requirements given for this product under Maltine with Cod Liver Oil (New and Nonofficial Remedies, 1932, p. 273).

Prepared by The Maltine Co., Brooklyn. No U. S. patent. U. S. trademark 44,566.

Committee on Foods

GENERAL COMMITTEE DECISIONS

THE COMMITTEE ON FOODS AUTHORIZES THE PUBLICATION OF THE FOLLOWING GENERAL COMMITTEE DECISIONS ADOPTED FOR ITS OWN GUIDANCE AND FOR THAT OF FOOD MANUFACTURERS AND ADVERTISING AGENCIES ON FOOD COMPOSITION AND FOOD ADVERTISING.

RAYMOND HERTWIG, Secretary.

SO-CALLED SPECIAL "DIABETIC FOODS" OR SPECIAL FOODS FOR SUGAR AND CARBOHYDRATE RESTRICTED DIETS

There is authoritative evidence that commercially prepared special "diabetic foods" are of limited usefulness to the diabetic patient and that the availability of insulin makes them no longer necessary. Artificial substitutes for ordinary foods are not to be favored; it is much better for the diabetic patient to learn how to plan his diet with foods in common use and readily available. The diet should be exactly prescribed in carbohydrate, protein and fat and total calories.

The designation of a food as a "diabetic food" merely because it is low in carbohydrates is now unwarranted and misleading and gives the erroneous impression either that the food taken in unrestricted quantities in diabetes is harmless or that it has remedial action. Except for the necessity of restricting foods to avoid overstepping the food tolerance, there are no special diabetic nutritional requirements. The exploitation of starch-free or low carbohydrate foods containing an excess of protein for use by diabetic patients is unwarranted. Protein may be tolerated almost as poorly, if not quite as poorly, as starch in diabetes.

Lay advertising for these special foods shall not include disease names such as diabetes nor directly or indirectly indicate that the foods are curative or increase the ability of the body to utilize sugar, or give the impression of harmlessness when eaten in unrestricted amounts by diabetic patients. Foods marketed for the sick with diabetes shall not be advertised to the public except under the restrictions just stated; advertising of a medicinal or therapeutic character shall be limited to medical periodicals or material for physicians exclusively. The package label shall conform to the preceding requirements but may bear statements that the food is suitable for incorporation in diets indicated for moderate restriction of carbohydrates. Recipes on the label or in the advertising shall prescribe the quantities of each ingredient by weight and state the approximate protein, fat and carbohydrate content of the finished product.

WHOLE WHEAT AND GRAHAM FOODS

The terms whole wheat, entire wheat and graham as applied to flour and to bread are synonymous. In harmony with this understanding, these terms shall be used as food names or as parts of food names only when the sole cereal and farinaceous ingredient is whole wheat. Their use as names for foods with other composition is misinformative and misleading. Descriptive food names shall correctly and properly identify the nature of the foods.

REPORTS OF THE COMMITTEE

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

PRUNE KRUSH BRAND CALIFORNIA PURE PRUNE PULP

Manufacturer.—California Fruit Krush Co., San Francisco.

Description.—Cooked puréed prune pulp; in tins.

Manufacture.—Small size prunes are washed with water sprays, soaked in water over night, and boiled in a steam jacketed kettle until the skin disintegrates; the stones are separated out and the pulp is forced through a screen (0.07 inch perforations) in a special machine. The pulp is cooked in a preserving kettle to a definite consistency and is automatically canned and processed.

Analysis (submitted by manufacturer).—

	per cent
Moisture	74.0
Total solids	26.0
Ash	0.8
Fat (ether extract)	0.5
Protein (N × 6.25)	1.8
Reducing sugars before and after inversion as dextrose	17.0
Sucrose	0.0
Crude fiber	1.4
Pectin	1.9
Titratable acidity as citric acid	0.6
Carbohydrates other than crude fiber (by difference)	20.9

Calories.—1.0 per gram; 28 per ounce.

Claims of Manufacturer.—"Prune Krush" is for all table uses of prunes, is laxative and may be used in soft diets.

THAT GOOD FLOUR—HELIOTROPE PATENT (BLEACHED)

Manufacturer.—Oklahoma City Mill & Elevator Company, Associate of General Mills, Minneapolis.

Description.—A patent flour milled from hard winter and soft red winter wheat; bleached.

Manufacture.—Selected wheat is cleaned, scoured, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended, bleached with a mixture of benzoyl peroxide and calcium phosphate (1/10 ounce per barrel) and with chlorine (7/8 ounce per barrel) and automatically packed in cotton sacks.

Analysis (submitted by manufacturer).—

	per cent
Moisture	13.1
Ash	0.39
Fat (ether extraction method)	0.8
Protein (N × 5.7)	10.0
Crude fiber (maximum)	0.5
Carbohydrates other than crude fiber (by difference)	75.2

Calories.—3.5 per gram; 99 per ounce.

Claims of Manufacturer.—A patent flour for general home baking.

PFIZER CITRIC ACID, ANHYDROUS

Manufacturer.—Charles Pfizer & Co., Inc., Brooklyn.

Description.—Coarse granular, fine granular or powdered anhydrous citric acid meeting all U. S. P. tests for hydrated citric acid for purity; assaying not less than 108.8 per cent as U. S. P. citric acid.

Manufacture.—An aqueous solution of sucrose and necessary nutrient salts is subjected to an oxidizing mold fermentation. Care is exercised to avoid contamination of the medium with any miscellaneous micro-organisms. The fermentation is carried out under aerobic conditions. When substantial conversion of the sucrose is obtained, the crude citric acid is precipitated with lime and filtered from the mother liquor. The calcium citrate is suspended in clean water and treated with sulphuric acid; the resulting solution of citric acid is filtered and concentrated; the crystallized citric acid is separated from the mother liquid and recrystallized to desired purity. The crystals are air dried at elevated temperature and packed in suitable containers.

Analysis (submitted by manufacturer).—

	per cent
Citric acid, anhydrous	99.5 –99.8
Moisture	0.1 – 0.4
Ash	0.02– 0.05
	Maximum limits of impurities
Oxalate (C_2O_4)	0.02
Phosphate (PO_4)	0.000
Sulphate (SO_4)	0.024
Tartrate ($C_4H_4O_6$)	0.02
Heavy metals as lead (Pb)	0.0005
Iron (Fe)	0.0005
Calcium (Ca)	0.012

Calories.—2.5 per gram (International Critical Tables 5: 165); 71 per ounce.

Claims of Manufacturer.—This citric acid is for use in foods when an organic acidulent is desired.

PRUDENCE BOSTON BROWN BREAD
(Colored with Molasses and Burnt Sugar Only)

Manufacturer.—Boston Food Products Company, Boston.

Description.—Canned "Boston Brown Bread" containing wheat and rye flours, corn meal, New Orleans molasses, salt, baking soda and caramel (burnt sugar).

Manufacture.—Weighed quantities of wheat and rye flours, corn meal and baking soda are mixed and added to New Orleans molasses, salt, water and a small quantity of caramel for coloring. The mixture is thoroughly agitated in a mixing machine, transferred to a filling machine and automatically packed in cans coated on the inside with vegetable shortening. The partially sealed cans are air exhausted, processed for four hours and sealed.

Analysis (submitted by manufacturer).—

	per cent
Moisture	45.7
Total solids	54.3
Ash	3.2
Fat (ether extract)	1.2
Protein (N × 6.25)	4.3
Reducing sugars before inversion as dextrose	5.4
Reducing sugars after inversion as invert sugar	15.5
Sucrose	9.6
Crude fiber	1.2
Starch (acid hydrolysis method)	26.3
Carbohydrates other than crude fiber (by difference)	44.4

Calories.—2.1 per gram; 60 per ounce.

Claims of Manufacturer.—A Boston brown bread fulfilling the United States Department of Agriculture definition and standard.

MALTEX CEREAL
Prepared Wheat, Malted Flour, and Salt

Manufacturer.—Malted Cereals Company, Burlington, Vt.

Description.—A mixture of lightly toasted coarsely ground wheat with the coarse bran removed, granular baked malted wheat flour and a small amount of salt; packed in cartons.

Manufacture.—The main ingredient is coarsely ground cleaned lightly roasted durum wheat with the coarse bran and fine flour removed. The "malt" ingredient is prepared by malting white flour with diastatically active barley malt; the mixture is maintained at a definite temperature for several hours, baked in sheets, cooled and ground.

The roasted wheat and baked "malted mix" are mixed in definite proportions with a small amount of salt and automatically packed in cartons.

Analysis (submitted by manufacturer).—

	per cent
Moisture	5.6
Ash	2.1
Sodium chloride (NaCl)	0.2
Fat (ether extraction method)	1.5
Protein (N × 6.25)	15.2
Reducing sugars as dextrose before inversion	6.7
Reducing sugars as dextrose after inversion	7.0
Sucrose (polarization method)	0.5
Crude fiber	0.9
Carbohydrates other than crude fiber (by difference)	74.9

Calories.—3.7 per grain; 105 per ounce.

Claims of Manufacturer.—A malt flavored cereal for table use.

JEWEL EXTRA FANCY HEAD BLUE ROSE RICE

Distributor.—Jewel Tea Co., Inc., Barrington, Ill.

Description.—Whole, hard-brushed rice kernels in cartons.

Manufacture.—The rough rice is screened and fanned to remove foreign matter, and is passed between milling stones to break the hulls without crushing the grain. The chaff is removed by fanning. The germ and bran are separated from the kernels by friction by passing the rice between concentric cylinders, the inner being covered with sheepskin and the outer lined with wire gauze. The hard-brushed rice is graded by being passed over separating screens. The "head rice," unbroken kernels, with less than 0.5 per cent broken kernels, is used for this brand.

Analysis (submitted by manufacturer).—

	per cent
Moisture	10.7
Ash	0.4
Fat (ether extraction method)	0.5
Protein (N × 6.25)	7.1
Crude fiber	0.6
Carbohydrates other than crude fiber (by difference)	80.7

Calories.—3.6 per gram; 102 per ounce.

Claims of Manufacturer.—An unbroken hard-brushed rice for table use.

LUCKY BREAD GRAHAM FLOUR

Manufacturer.—Federal Mill, Inc., Lockport, N. Y.

Description.—Whole wheat flour; the bran is moderately fine.

Manufacture.—Selected spring wheat is cleaned, scoured as in the preparation of wheat for the making of regular flour, and milled as in the making of flour. At the end of the process, the flour and "feed" fractions are blended in the same proportions as they occur in the original wheat.

Analysis (submitted by manufacturer).—

	per cent
Moisture	14.5
Ash	1.6
Fat (ether extraction method)	2.3
Protein (N × 5.7)	12.8
Crude fiber	2.5
Carbohydrates other than crude fiber (by difference)	66.3

Calories.—3.4 per gram; 97 per ounce.

Claims of Manufacturer.—Conforms to the United States Department of Agriculture definition and standard for graham flour.

LUCKY WHOLE OF THE WHEAT FLOUR

Manufacturer.—Federal Mill., Inc., Lockport, N. Y.

Description.—Whole wheat flour; the bran is moderately fine.

Manufacture.—Selected spring wheat is cleaned and scoured, as in the preparation of wheat for making regular flour, and ground through steel rolls. The product contains all portions of whole wheat in their natural proportions.

Analysis (submitted by manufacturer).—

	per cent
Moisture	14.0
Ash	1.8
Fat (ether extraction method)	2.8
Protein (N × 5.7)	14.4
Crude fiber	2.9
Carbohydrates other than crude fiber (by difference)	64.1

Calories.—3.4 per gram; 97 per ounce.

Claims of Manufacturer.—Conforms to the United States Department of Agriculture definition and standard for whole wheat flour.

RADIOLOGIC SERVICE IN THE UNITED STATES

REPORT BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

Since general practitioners as well as many specialists depend on the radiologist for invaluable aid in diagnosis and treatment, the accurate certification of specialists in this field is of the utmost importance to the patient as well as to the profession. From the beginning of this work the Council has always stressed the conception that the practice of radiology is the practice of medicine.

The field of radiology is attractive to the recent graduate. It is especially attractive to ambitious persons of a mechanical turn of mind for the reason that the work employs mechanical devices and it appears to the uninformed public that little training or special knowledge is necessary. A large number of lay persons trained as technicians have established radiologic laboratories and attempted to give the impression that they are medically competent in this field. This group attempts to convert this special branch of medicine into a trade and to carry an impression to the public that medical training is not essential. In many instances, physicians themselves patronize these laboratories and thus foster them. Often lay controlled and operated laboratories hire physicians to sign their reports and otherwise "use" their names. The designation by the Council of those qualified not only discourages the unreliable commercial laboratory operated by technicians or lay specialists but also tends to dissuade improperly qualified physicians from holding themselves out as specialists in this field. By the regular publication of lists of accredited radiologists, physicians generally are encouraged to refer their work to qualified medical graduates whether they are in hospital or private laboratories.

In analyzing the qualifications of candidates for recognition as specialists in radiology, it is noted that a number of physicians are applying who give only a small portion of their time to the work, the remaining portion being devoted to another specialty or to general practice. According to their training and experience they may be qualified as radiologists, but since they are located in sparsely populated sections there is not sufficient work in radiology to occupy their entire time. Naturally, in order to supplement their income they engage in other work. This situation constitutes somewhat a problem in the certification of radiologists.

When it is a physician's desire to be recognized as a specialist in radiology and he fulfils the essentials, the question arises as to how much time should be required in the specialty in order that he may be eligible. Briefly, the question is "Is the eligibility of a physician for recognition to be judged by what he can perform or what he actually does perform with regard to the volume of work?" It would seem only fair to credit a physician with his ability whether he actually carries out a large volume of work or not. It is felt by some that the part time man is not a specialist and should not be accredited as such, the contention being that, unless a physician's main interest and the majority of his time and activity are devoted to the specialty in which he seeks endorsement, he should not be certified by the Council. Others feel that it is desirable to designate certain radiologists in more or less isolated sections who may devote only a small portion of their time to the specialty and thus serve the best interest of the patient.

The third publication of the list of specialists in radiology contains the names of some 1,200 physicians. The work of preparing a list of acceptable radiologic laboratories and departments of radiology was assigned the Council on Medical Education and Hospitals by the House of Delegates at the Minneapolis session in 1928. The essentials for physicians conducting approved radiologic laboratories were set up by the Council in collaboration with a large number of prominent radiologists. With the shift of the emphasis from the radiologic laboratory to the qualifications of the physician in direction as a radiologist, a revision of the essentials was made to correspond with this change in point of view. The revised essentials, which are published in connection with this article, were adopted by the Council in February, 1932, and ratified by the House of Delegates at the New Orleans session. Previous to that time the list consisted mainly of physicians conducting private and hospital radiologic laboratories. The list is now meant to include all physicians properly qualified as radiologists whether in private or hospital laboratories, governmental departments, educational work or research.

The membership in special radiologic societies has been of incalculable value in extending recognition to those qualified. Since these special societies do not certify specialists, naturally their membership lists contain the names of many physicians whose major interest and time are given over to other specialties. Special societies may also at times accept members whose training and experience are not acceptable for certification of specialists. Since the Council as an impartial, fact finding body with complete biographic information on all physicians has taken up this work, it has become apparent that it offers a most practical means for the identification of specialists.

Without doubt the Council's work has helped to place the specialty of radiology on a high plane. The work of preparing reliable lists of radiologists will be maintained as a permanent part of the Council's work. The consideration of new applications will go on continuously and revised lists will be published from time to time. The cooperation of the physicians in the specialty has been excellent and must continue in order that the lists may be of maximum value.

A description of how the list is compiled may be referred to in THE JOURNAL, March 19, 1932, page 984.

ESSENTIALS FOR ADMISSION TO LIST OF PHYSICIANS SPECIALIZING IN RADIOLOGY

Prepared by the Council on Medical Education and Hospitals

PHYSICIANS ELIGIBLE

Consideration for admission to the list is open to all regular licensed physicians engaged in radiologic work in accordance with the essentials, whether connected with a hospital or conducting an independent laboratory.

1. QUALIFICATIONS

(*a*) The candidate shall be a graduate of a medical school that is approved by the Council on Medical Education and Hospitals and shall be licensed to practice medicine in the state in which his department is located. He shall also have had special training, such as is approved by the Council, in radiology, roentgenology or radium therapy at an acceptable school — preceptorship, hospital or clinic, department of radiology, roentgenology or radium therapy — for a period of at least three years, or, in lieu of such training, shall have had a minimum of five years' experience in the exclusive practice of radiology, roentgenology or radium therapy. He must be a man of good standing in the medical profession, and particularly among those specializing in radiology. He shall either be on a full time basis or have definite hours of attendance at the department, such hours to be ample to insure the element of medical consultation in every examination or treatment.

(*b*) The department shall be under the direction of a physician radiologist, roentgenologist or radium therapist, as the circumstances may require. The director shall be responsible for all examinations and treatments. He shall be responsible for all professional assistants and for the efficient maintenance of the department.

Physicians employed by laboratories which are under lay control and direction will not be eligible for consideration for this listing.

(*c*) *Assistants.*—The director may have a corps of qualified medical and technical assistants responsible to him, and for whom he is responsible, to carry out accurately the various functions of the department.

2. DEFINITIONS

Radiology.—The branch of medicine which deals with the diagnostic and therapeutic application of radiant energy, including roentgen rays, radium, ultraviolet rays and other spectral radiation.

Department of Radiology.—A private laboratory or department of a hospital, clinic or other institution, organized and equipped for the diagnostic and therapeutic application of radiant energy, including roentgen rays, radium, ultraviolet rays and other spectral radiation.

Radiologist.—A qualified physician who also has obtained adequate special training and experience in general radiology.

Roentgenology.—The phase of radiology which deals with the diagnostic and therapeutic application of roentgen rays only.

Department of Roentgenology. — A private laboratory or department of a hospital, clinic or other institution organized and equipped for the diagnostic and therapeutic application of roentgen rays only. A department organized and equipped solely for the diagnostic or therapeutic application of roentgen rays shall be known as a department of diagnostic or therapeutic roentgenology, respectively.

Roentgenologist.—A qualified physician who has had adequate training and experience in the diagnostic and therapeutic application of roentgen rays.

Diagnostic Roentgenologist.—A roentgenologist who limits his practice to the diagnostic phase of roentgenology.

Therapeutic Roentgenologist.—A roentgenologist who limits his practice to the therapeutic phase of roentgenology.

Radium Specialist.—A physician who has had adequate training and experience in the therapeutic use of radium and who specializes in this work.

3. SCOPE

A department of radiology should be able to render all of the following services:

(*a*) Roentgenography, simple or stereoscopic, of any part of the body, with medical interpretation of the roentgenographic observations, and under satisfactory conditions for the protection of the patient and of the professional and technical personnel.

(*b*) Roentgenoscopy of any part of the body, in any position, with or without opaque mediums, with medical interpretation of the roentgenoscopic observations, and under satisfactory conditions for the protection of the patient and the professional and technical personnel.

(*c*) Roentgenotherapy of all benign and malignant diseases amenable to such treatment with roentgen rays generated at low, moderate or high voltage (long, medium or short wavelength), as the conditions may require, and under satisfactory conditions for the protection of the patient and of the professional and technical personnel.

(*d*) Radium therapy of all benign and malignant diseases amenable to such treatment with an adequate quantity of radium element or emanation, and under satisfactory conditions for the protection of the patient and of the professional and technical personnel.

Ultraviolet therapy, general or local, with satisfactory air-cooled and water-cooled quartz mercury lamps or carbon arc lamps, with suitable quartz and other applicators for irradiation of cavities, sinuses or the superficial lesions under pressure, and under satisfactory conditions for the protection of the patient and of the professional or technical personnel. This stipulation is not mandatory, but the Council recommends that every department of radiology be equipped for ultraviolet therapy or that the ultraviolet equipment of hospitals be placed in the department of radiology. Ultraviolet treatment by the department of physical therapy shall not be countenanced unless such department is under the control and supervision of a medical director who has specialized in radiology.

A department of roentgenology should be able to render the services specified under *a*, *b* and *c*.

A department of diagnostic roentgenology should be able to render the services specified under *a* and *b*.

A department of therapeutic roentgenology should be able to render the services specified under *c*.

A department of radium therapy should be able to render the services specified in *d*.

4. HOUSING

The housing should be adequate for the proper functioning of the department of radiology or roentgenology. Damp or ill ventilated quarters are unsuitable for such work.

5. EQUIPMENT

The equipment should be sufficient to carry out properly the technical procedures and activities of the department of radiology, roentgenology or radium therapy.

6. PROTECTION

The arrangement of working rooms and conditions, and the construction of all apparatus shall be such as to provide adequate protection, both from electrical shock and from avoidable exposure to roentgen rays or radium, to patients, attendants and other persons in or near the department. The requirements in this respect are based on the recommendations adopted by the International Congress of Radiology, held at Stockholm, Sweden, in July, 1928, and approved by the American Roentgen Ray Society and the Radiological Society of North America.

7. RECORDS

Full records of all examinations and treatments, made by the department, suitably indexed, are essential. Roentgenograms made in the department should have inerasable identifi-

cation marks which will preclude error as to patients concerned. Roentgenograms may be lent to referring physicians but should be returned to the laboratory for filing and future reference. Suitable storage facilities should be provided where roentgenograms and other records will be both safe and readily available for reference. They shall be kept as long as there is the possibility of their being needed for the benefit of the patients or their physicians.

As roentgenography constitutes only a kind of medical examination, on which the roentgenologist's opinion of the patient's condition is partly or wholly based, and as the opinion of the specialist is the essential factor, the Council holds that the introduction of roentgenograms as evidence in medicolegal cases should be discouraged as immaterial and as tending to adulterate the process of justice. There is no more reason for the introduction of roentgenograms than for requiring a pathologist to bring to court his microscope and his sections of tissues.

8. Reports

The reports of a department of radiology, roentgenology or radium therapy shall be made through the director on stationery or blanks having the name of the director printed thereon. Under no circumstances shall roentgenologic diagnoses, interpretations, opinions, statements of prognosis, or therapeutic suggestions be offered by the nonmedical personnel.

9. Library

The department of radiology, roentgenology or radium therapy should be provided with, or have convenient access to, a library including current scientific books and journals on all the various subjects required in its work.

10. Ethics, Fees and Publicity

Radiology is a special type of medical practice, and the physician practicing radiology is subject to the same rules of special training and conduct that govern his fellow specialists in the practice of medicine and surgery. The Principles of Medical Ethics of the American Medical Association shall apply in all cases. The fees charged for radiologic services shall be under the control of the director of the department. All systems of rebates, discounts, special group rates, etc., shall be considered unethical, except that, where the patient's economic status is the determining factor, the radiologist, like his fellow physician in medicine or surgery, may waive part or all of the fee.

The publicity of a department of radiology, roentgenology or radium therapy should be in professional good taste and limited to statements of fact as to name, address and telephone number; names and titles of the director and other active responsible personnel; field of work covered, office hours, directions for referring patients, and so forth. It should not contain misleading statements or claims of unusual superiority. It should not advocate medical fads nor lay undue stress on the importance of roentgenologic observations. On the letterheads or any other form of publicity, only the names of those rendering regular services to the department should appear as being connected with the department. Advertising matter should be directed only to physicians, either through bulletins or through recognized technical journals, and never to the nonprofessional public, as, for example, by announcements in popular journals and periodicals, circulars, pamphlets or telephone lists.

11. Admission to the Approved List

Only when the physician is the director or is affiliated with a department of radiology, roentgenology or radium therapy in which the personnel, space, equipment, management, finances and records are such as will insure honest, efficient and accurate work may he expect to be listed. Physicians desiring to be considered for the approved list should apply to the Council on Medical Education and Hospitals of the American Medical Association, 535 North Dearborn Street, Chicago.

PHYSICIANS SPECIALIZING IN RADIOLOGY—1,187

The list contains the names of only those who have applied for recognition and who have been found to comply with the "Essentials." The advisers for their respective states have passed favorably upon them. Those who are still under consideration, and others who may apply, will, when accepted, be added in subsequent issues of The Journal.

The type of service rendered is given opposite the name. "Radiology," under "Type of Service," always includes short wave therapy, also known as "deep therapy." The asterisk (*) on "roentgenology" indicates that short wave therapy is included.

ALABAMA

Name	Address	Type of Service
Anniston		
Levi, Irwin P.	931 Noble St.	Roentgenology
Birmingham		
Barfied-Carter, M.	2031, 1st Ave., N.	Roentgenology
Edmonson, John H.	1928, 1st Ave., N.	Roentgenology
Kesmodel, Karl F.	1023 S. 20th St.	Roentgenology
Meadows, James A.	1023 S. 20th St.	Roentgenology
Sorrell, Lewis E.	2501, 16th St.	Roentgenology *
Dothan		
Ellis, John T.	200 E. Main St.	Roentgenology
Fairfield		
Troje, Oscar R.	Tenn. Coal, Iron & R. R. Co. Employee's Hosp.	Radiology
Mobile		
Gravlee, I. M.	1252 Springhill Ave.	Radiology
Montgomery		
Boswell, F. P.	201 Montgomery St.	Radiology

ARIZONA

Phoenix		
Goss, H. L.	125 W. Monroe St.	Roentgenology
Watkins, W. Warner	15 E. Monroe St.	Radiology
Tucson		
Hayden, Edward M.	Desert Sanatorium and Institute of Research	Diagnostic roent.

ARKANSAS

Fort Smith		
Brooksher, W. R., Jr.	602 Garrison Ave.	Radiology
Hot Springs		
Favour, Richmond, Jr.	Army and Navy General Hospital	Roentgenology
Nims, Chas. H.	236 Central Ave.	Radiology
Little Rock		
Rhinehart, B. A.	701 Main St.	Roentgenology
Rhinehart, D. A.	701 Main St.	Roentgenology
Zell, A. M.	2000 Main St.	Radiology
Monticello		
Wilson, J. S.		Radiology

CALIFORNIA

Name	Address	Type of Service
Alameda		
Lum, Wm. T.	1361 Park St.	Roentgenology *
Bakersfield		
Fox, L. H.	2025, 18th St.	Roentgenology
Berkeley		
Bissell, Frank S.	2236 Durant Ave.	Roentgenology
Heald, E. Schulze	3000 Regent St.	Roentgenology
Van Nuys, R. G.	2490 Channing Way.	Radiology
Fresno		
Milholland, W. G.	1015 Fulton St.	Roentgenology
Ruff, Frank R.	1234 S St.	Radiology
Glendale		
Ghrist, David M.	143 N. Brand St.	Radiology
Jones, L. L.	229 N. Central Ave.	Roentgenology *
Hollywood		
Sherman, B. H.	6777 Hollywood Blvd.	Roentgenology
Stewart, Chas. W.	1680 N. Vine St.	Roentgenology
Warren, J. W.	1322 N. Vermont Ave.	Radiology
Livermore		
Beaudet, E. A.	Veterans Administration Hospital	Diagnostic roent.
Long Beach		
Heylmun, H. H.	115 Pine Ave.	Diagnostic roent.
Mayfield, Claude	115 Pine Ave.	Diagnostic roent.
Los Angeles		
Abowitz, Jacob	4833 Fountain Ave.	Roentgenology
Bailey, Cornellus O.	727 W. 7th St.	Radiology
Blaine, Edward S.	727 W. 7th St.	Roentgenology
Bonoff, Karl M.	1930 Wilshire Blvd.	Roentgenology
Carter, Ray A.	1100 Mission Rd.	Roentgenology
Costolow, Wm. E.	1407 S. Hope St.	Roentgen therapy Radium therapy
Davis, Kenneth S.	2131 Ocean View Ave.	Roentgenology *
Goin, Lowell S.	1930 Wilshire Blvd.	Roentgenology
Johnson, Clayton R.	1100 Mission Rd.	Diagnostic roent.
Karshner, Rolla G.	510 S. Lucas Ave.	Roentgenology
Kibby, Sydney V.	417 S. Hill St.	Roentgenology
Liljedahl, Elmer N.	1241 Shatto St.	Roentgenology *
MacColl, Douglass R.	2826 S. Hope St.	Roentgenology *
Martin, A. T.	269 S. Mariposa St.	Radiology
McKee, Edward N.	2173 Colorado Blvd., Eagle Rock	Roentgenology
Pindell, Merl Lee	678 S. Ferris Ave.	Diagnostic roent.

NAME	ADDRESS	TYPE OF SERVICE
Snure, Henry	1414 S. Hope St.	Radiology
Soiland, Albert	1407 S. Hope St.	Roentgen therapy Radium therapy
Stafford, Owen R.	520 W. 7th St.	Roentgenology
Taylor, Raymond G.	1212 Shatto St.	Radiology
Witter, Calvin B.	511 S. Bonnie Brae St.	Roentgenology *
Mare Island		
Perry, Wendell Holmes	U. S. Naval Hospital	Roentgenology
Pinner, Wm. Ellis	U. S. Naval Hospital	Roentgenology
Oakland		
Bowen, Carl B.	1624 Franklin St.	Roentgenology
Jelte, S. A.	230 Grand Ave.	Radiology
Mandeville, Frederick B.	434, 30th St.	Roentgenology *
Petch, Philip H.	428, 17th St.	Roentgenology
Peters, Chas. E.	400, 29th St.	Roentgenology *
Sargent, Wm. H.	1624 Franklin St.	Roentgenology *
Siefert, Alfred C.	Hawthorne Ave. & Webster St.	Radiology
Palo Alto		
Powers, Robert A.	261 Hamilton St.	Roentgenology
Pasadena		
Chapman, John Frye	65 N. Madison Ave.	Roentgenology *
Parker, Carl H.	65 N. Madison Ave.	Roentgenology *
Pomona		
Swearingen, F. C.	586 N. Main St.	Radiology
Redlands		
Folkins, F. H.	47 E. Vine St.	Roentgenology
Riverside		
Thuresson, Paul F.	3770, 12th St.	Diagnostic roent.
Sacramento		
Briggs, Rowland S.	1014, 8th St.	Radiology
Cook, Orrin S.	1127, 11th St.	Roentgenology
Graham, Ralph S.	2830 L St.	Roentgenology *
Lawson, John D.	928 Jay St.	Radiology
Woolford, Joseph S.	926 Jay St.	Roentgenology
Zimmerman, Harold	1027, 10th St.	Radiology
San Bernardino		
Owen, C. C.	398, 6th St.	Roentgenology *
San Diego		
Elliott, A. E.	1831, 4th St.	Radiology
Kinney, L. C.	1831, 4th St.	Radiology
Spalding, Otis B.	U. S. Naval Hospital	Roentgenology *
Weiskotten, W. O.	233 A St.	Diagnostic roent.
Whitehead, Ely L.	U. S. Naval Hospital	Roentgenology *
San Francisco		
Bryan, Lloyd	450 Sutter St.	Roentgenology *
Crow, Lloyd B.	1400 Fell St.	Roentgenology *
Donovan, Monica	450 Sutter St.	Roentgenology Radium therapy
Fulmer, Chas. C.	27th and Valencia Sts.	Roentgenology
Garland, L. Henry	450 Sutter St.	Roentgenology *
Hunsberger, H. S.	450 Sutter St.	Diagnostic roent.
Ingber, I. S.	490 Post St.	Radiology
Leef, Edward	2361 Clay St.	Radiology
Levitin, Joseph	450 Sutter St.	Radiology
Newell, Robert R.	2361 Clay St.	Radiology
O'Neill, John R.	2200 Hayes St.	Roentgenology
Rehfisch, John M.	450 Sutter St.	Roentgenology *
Rice Frank M.	2000 Van Ness Ave.	Roentgenology *
Rodenbaugh, F. H.	490 Post St.	Radiology
Ruggles, Howard E.	384 Post St.	Roentgenology
Starks, Dorothy J.	2361 Clay St.	Radiology
Stone, Robert S.	Parnassus and 3d Ave.	Roentgenology
Williams, Francis	870 Market St.	Radiology
San Jose		
Broemser, Milton A.	311 S. 1st St.	Radiology
Bullitt, James B.	241 E. Santa Clara St.	Roentgenology
Richards, Charles M.	241 E. Santa Clara St.	Roentgenology *
San Pedro		
Allen, Albert	410 W. 6th St.	Diagnostic roent.
Keener, Harry Allison	U. S. S. Relief	Diagnostic roent.
Santa Barbara		
Clark, Daniel M.	1520 Chapala St.	Diagnostic roent.
Geyman, M. J.	1520 Chapala St.	Radiology
Ullmann, H. J.	1520 Chapala St.	Radiology
Ware, James G.	1513 State St.	Roentgenology *
Santa Monica		
Hopkirk, C. C.	710 Wilshire Blvd.	Diagnostic roent.
Stockton		
McGurk, Raymond T.	242 N. Sutter St.	Roentgenology *
Sheldon, F. B.	242 N. Sutter St.	Radiology

COLORADO

Colorado Springs		
Brown, L. Gordon	707 N. Cascade Ave.	Radiology
Denver		
Allen, K. D. A.	227, 16th St.	Roentgenology *
Bouslog, John S.	227, 16th St.	Radiology
Brandenburg, H. P.	227, 16th St.	Radiology
Childs, S. B.	227, 16th St.	Radiology
Conyers, Chester A.	209, 16th St.	Radiology
Crosby, L. G.	227, 16th St.	Radiology
Diemer, Frederick E.	19th and Pearl Sts.	Diagnostic roent.
McCaw, William W.	Fitzsimons General Hosp.	Roentgenology *
Newcomer, Elizabeth	209, 16th St.	Roentgenology *
Newcomer, N. B.	1616 Tremont St.	Radiology
Schmidt, Ernst A.	4200 E. 9th Ave.	Radiology
Stephenson, F. B.	227, 16th St.	Roentgenology
Wasson, W. W.	227, 16th St.	Radiology
Withers, Sanford	1612 Tremont St.	Roentgenology Radium therapy
Longmont		
Matlack, J. A.		Diagnostic roent.
Sterling		
Daniel, J. H.		Roentgenology
Woodmen		
Forney, F. A.		Diagnostic roent.

CONNECTICUT

NAME	ADDRESS	TYPE OF SERVICE
Bridgeport		
Groark, Owen J.	881 Lafayette St.	Diagnostic roent.
Lockhart, R. Harold	144 Golden Hill St.	Radiology
Parmelee, B. M.	144 Golden Hill St.	Radiology
Hartford		
Butler, Nicholas G.	50 Farmington Ave.	Roentgenology
Climan, Max	242 Trumbull St.	Diagnostic roent.
Hoffman, Charles C.	700 Main St.	Diagnostic roent.
Ogden, Ralph T.	179 Allyn St.	Radiology
Roberts, Douglas J.	179 Allyn St.	Radiology
Van Strander, W. H.	179 Church St.	Radiology
Meriden		
Otis, Fessendon N.	165 W. Main St.	Roentgenology
Middletown		
Murphy, James	101 Broad St.	Radiology
New Britain		
Grant, Arthur S.	55 W. Main St.	Roentgenology
New Haven		
Bergman, A. P.	27 Elm St.	Diagnostic roent.
Goldman, George	201 Park St.	Diagnostic roent.
Scott, Clifton R.	215 Whitney Ave.	Roentgenology
Wheatley, Louis F.	420 Temple St.	Radiology
Norwalk		
Perkins, Charles W.	520 West Ave.	Roentgenology *
Waterbury		
Atkins, Samuel M.	111 W. Main St.	Roentgenology *
Willimantic		
Kinney, Kenneth K.	29 North St.	Roentgenology

DELAWARE

Wilmington		
Allen, B. M.	909 Washington St.	Diagnostic roent.
Burns, Ira	601 Delaware Ave.	Diagnostic roent.
McElfatrick, G. C.	1024 W. 8th St.	Diagnostic roent.

DISTRICT OF COLUMBIA

Washington		
Bierman, M. I.	1801 Eye St., N.W.	Diagnostic roent.
Carroll, William J.	% The Surgeon General, U. S. Army	Roentgenology *
Caylor, C. C.	1029 Vermont Ave., N.W.	Diagnostic roent.
Christie, A. C.	1835 Eye St., N.W.	Radiology
Coe, Fred O.	1835 Eye St., N.W.	Radiology
Elward, Joseph F.	1726 Eye St., N.W.	Roentgenology
Groover, T. A.	1835 Eye St., N.W.	Radiology
Kellogg, Douglas S.	Walter Reed General Hosp.	Roentgenology *
Lattman, Isidore	1835 Eye St., N.W.	Radiology
McPeak, Edgar M.	1835 Eye St., N.W.	Radiology
Merritt, E. A.	1835 Eye St., N.W.	Radiology
Minehart, V. L.	2650 Wisconsin Ave.	Radiology
Moore, A. B.	1835 Eye St., N.W.	Radiology
Moore, Claude	815 Connecticut Ave.	Roentgenology
Moore, John J.	Army Medical School	Roentgenology *
Otell, L. S.	1835 Eye St., N.W.	Radiology
Sappington, E. F.	1103, 16th St., N.W.	Roentgenology

FLORIDA

Clearwater		
Brown, Harold O.		Roentgenology
Fort Lauderdale		
Hendricks, E. M.	Sweet Bldg.	Radiology
Jacksonville		
Cunningham, L. W.	117 W. Duval St.	Roentgenology *
McEuen, H. B.	126 W. Adams St.	Roentgenology *
Shaw, W. McL.	117 W. Duval St.	Roentgenology *
Lakeland		
Weed, Walter A.	Lakeland Hills Blvd.	Roentgenology Radium therapy
Miami		
Cleghorn, Charles D.	168 S.E. 1st St.	Roentgenology Radium therapy
Lucinian, Joseph H.	168 S.E. 1st St.	Roentgenology *
Raap, Gerard	168 S.E. 1st St.	Diagnostic roent. Radium therapy
Miami Beach		
Payton, Frazier J.		Roentgenology Radium therapy
Ocala		
Moore, J. N.		Diagnostic roent.
Orlando		
Pines, John A.	108 E. Central Ave.	Roentgenology *
St. Petersburg		
Feaster, O. O.	11th St. and 7th Ave.	Radiology
Herring, John A.	342, 3d Ave. N.	Diagnostic roent.
Sanford		
Marshall, C. J.	212 E. 1st St.	Radiology
Tampa		
Allen, Bundy	706 Franklin St.	Roentgenology *
Dickinson, J. C.	706 Franklin St.	Roentgenology *
West Palm Beach		
Herpel, Fredk. K.	N. Dixie Ave.	Diagnostic roent.

GEORGIA

Americus		
Pendergrass, R. C.		Roentgenology *
Atlanta		
Clark, James J.	478 Peachtree St., N. E.	Roentgenology
Hall, O. D.	East Ave. and N. Boulevard	Radium therapy
Lake, Wm. F.	384 Peachtree St., N. E.	Roentgenology *
Landham, J. W.	139 Forrest Ave., N. E.	Roentgenology Radium therapy
Moore, Harvard C.	Station Hospital, Fort McPherson	Roentgenology
Rayle, Albert A.	36 N. Butler St.	Roentgenology
Stewart, Calvin B.	36 N. Butler St.	Radium therapy
Augusta		
Holmes, L. P.	753 Broad St.	Roentgenology

NAME	ADDRESS	TYPE OF SERVICE
Savannah		
Cole, Wm. A.	24 E. Taylor St.	Roentgenology
Corson, Eugene R.	10 W. Jones St.	Roentgenology *
Drane, Robert	Liberty and Drayton Sts.	Roentgenology Radium therapy
McGee, H. H.	14 E. Taylor St.	Roentgenology
Thomasville		
Collins, J. J.		Radiology
IDAHO		
Boise		
Genoway, Charles V.	105 N. 8th St.	Roentgenology *
Lewiston		
Johnson, Paul W.		Roentgenology *
ILLINOIS		
Batavia		
Mostrom, H. T.		Diagnostic roent. Radium therapy
Belvidere		
Alguire, Alden		Diagnostic roent.
Bloomington		
Cantrell, Thomas D.	310 E. Jefferson St.	Radiology
Grote, Henry W.	219 N. Main St.	Radiology
Chicago		
Arens, Robt. A.	2839 Ellis Ave.	Radiology
Beilin, David S.	411 Garfield Ave.	Radiology
Blackmarr, Frank H.	25 E. Washington St.	Roentgen therapy Radium therapy
Brams, Julius	55 E. Washington St.	Roentgenology
Brown, Wm. L.	55 E. Washington St.	Radium therapy
Capp, Charles S.	6128 Ingleside Ave.	Radiology
Case, James T.	180 N. Michigan Ave.	Radiology
Casellas, P. R.	1525 E. 53d St.	Roentgenology
Challenger, C. J.	3117 Logan Blvd.	Roentgenology
Cook, Carroll E.	30 N. Michigan Ave.	Radiology
Crowder, Earl R.	303 E. Chicago Ave.	Roentgenology *
Culpepper, Wm. L.	1180 E. 63d St.	Roentgenology
Cushway, B. C.	7752 S. Halsted St.	Radiology
Cutrera, Peter	501 N. Halsted St.	Diagnostic roent.
Damiani, Joseph	767 Milwaukee Ave.	Roentgenology
Davis, H. E.	2548 Lake View Ave.	Diagnostic roent.
Dick, Paul G.	55 E. Washington St.	Roentgenology
Ford, Charles	8017 Luella Ave.	Roentgenology
Ford, Frances A.	1606 Maypole Ave.	Radium therapy
Gilmore, Wilbur H.	185 N. Wabash Ave.	Roentgenology
Grubbe, Emil H.	6 N. Michigan Ave.	Roentgen therapy
Hartung, Adolph	25 E. Washington St.	Radiology
Hodges, Paul C.	928 E. 59th St.	Radiology
Hubeny, M. J.	25 E. Washington St.	Roentgenology
Jenkinson, David L.	1931 Wilson Ave.	Roentgenology *
Jenkinson, E. L.	1439 S. Michigan Ave.	Radiology
Kaplan, Maurice I.	3837 W. Roosevelt Rd.	Radiology
Landau, George M.	660 Groveland Park	Roentgenology
Larkin, A. James	25 E. Washington St.	Radium therapy
Litschgi, Joseph J.	551 Grant Pl.	Roentgenology
Maier, Roe J.	7752 S. Halsted St.	Radiology
McClure, C. F.	25 E. Washington St.	Roentgenology
Olin, Harry A.	6058 Drexel Blvd.	Roentgenology
Orndoff, B. H.	2561 N. Clark St.	Radiology
Potter, Hollis E.	122 S. Michigan Ave.	Roentgenology
Rose, Cassie Belle	1753 W. Congress St.	Radiology
Royer, Don J.	841 E. 63d St.	Roentgenology
Tichy, L. S.	3200 W. 22d St.	Roentgenology
Trostler, I. S.	25 E. Washington St.	Radiology
Wanninger, W. J.	9116 Exchange Ave.	Roentgenology
Warden, R. H.	1044 N. Francisco Ave.	Radiology
Warfield, C. H.	Wood and Harrison Sts.	Roentgenology
Willy, R. G.	2749 W. Foster Ave.	Roentgenology
Danville		
Allison, Otis W.	41 N. Vermilion St.	Radium therapy
Archibald, James S.	602 Green St.	Roentgenology
Dunham, L. H.	139 N. Vermilion St.	Radiology
Decatur		
Flinn, Fauntleroy	220 S. Webster St.	Radiology
Deerfield		
Davis, Charles J.		Roentgenology
East St. Louis		
Echternacht, A. C.	129 N. 8th St.	Radiology
Evanston		
Alexander, William G.	636 Church St.	Radiology
Conley, Bernard M.	355 Ridge Ave.	Roentgenology
Perry, Gentz	636 Church St.	Radiology
Galesburg		
Gunning, R. E. Lee	64 S. Prairie St.	Radiology
Great Lakes		
Owen, J. P.	U. S. Naval Hospital	Roentgenology
Highland Park		
Jacks, R. R.	2 N. Sheridan Rd.	Diagnostic roent.
Jacksonville		
Brouse, Ivan E.	316 W. State St.	Roentgenology *
Joliet		
Houston, Alfred M.	201 N. Chicago St.	Roentgenology
Lincoln		
Hagans, Frank M.	400 Broadway	Radium therapy
Mattoon		
Morgan, Chas. E.	213 S. 17th St.	Roentgenology
Mount Carmel		
Elkins, Harold A.		Roentgenology
Mount Vernon		
Smith, Elmer M.	1001½ Broadway	Roentgenology
Oak Park		
Ronayne, Frank J.	518 N. Austin Blvd.	Radiology
Olney		
Weber, James A.		Diagnostic roent. Radium therapy
Ottawa		
Pettit, Roswell T.	728 Columbus St.	Diagnostic roent.
Peoria		
Goodwin, P. B.	530 N. Glen Oak Ave.	Radiology
Magee, H. B.	408 Main St.	Radiology
Quincy		
Beirne, H. P.	648 Hampshire St.	Radiology
Swanberg, Harold	508 Maine St.	Radiology
Rockford		
Ackemann, H. W.	321 W. State St.	Radiology
Springfield		
Hilt, Lawrence M.	105 S. 5th St.	Roentgenology *
O'Hara, F. S.	403 E. Capitol Ave.	Radiology
INDIANA		
Crawfordsville		
Sigmond, H. W.	227 E. Main St.	Radiology
Evansville		
Cleveland, W. R.	22 N. W. 4th St.	Radiology
Meyer, Keith T.	600 Mary St.	Diagnostic roent.
Fort Wayne		
Rodriguez, Juan	2902 Fairfield Ave.	Radiology
Steele, M. F.	116 E. Berry St.	Diagnostic roent.
Truelove, A. O.	347 W. Berry St.	Radiology
Van Buskirk, E. M.	347 W. Berry St.	Radiology
Frankfort		
Chittick, A. G.	206 E. Walnut St.	Roentgenology
Gary		
Dietrich, Paul H.	2006 W. 4th Pl.	Roentgenology
Hammond		
Rauschenbach, C. W.	5245 Hohman Ave.	Roentgenology
Indianapolis		
Beeler, Raymond C.	23 E. Ohio St.	Radiology
Collins, James N.	23 E. Ohio St.	Radiology
Lochry, R. L.	Fall Creek Blvd. and Illinois St.	Roentgenology
Ochsner, Harold C.	Capitol Ave. and 16th St.	Radiology
Smith, Lester A.	23 E. Ohio St.	Radiology
Stayton, Chester A.	23 E. Ohio St.	Roentgenology *
Wright, Cecil S.	1076 W. Michigan St.	Radiology
Kokomo		
Ferry, Paul W.	224 N. Main St.	Diagnostic roent.
LaFayette		
McClelland, D. C.	308 N. 8th St.	Roentgenology *
Michigan City		
Martin, F. V.	501 Pine St.	Radiology
Muncie		
Moore, P. D.	Jackson and High Sts.	Radiology
New Castle		
Iterman, Geo. E.	1319 Church St.	Roentgenology
Plymouth		
Knott, Harry		Roentgenology
Shelbyville		
Inlow, Herbert H.	2 W. Washington St.	Diagnostic roent.
South Bend		
Fisher, Lawrence F.	105 E. Jefferson Blvd.	Roentgenology *
Terre Haute		
Pierce, H. J.	627 Cherry St.	Radiology
Union City		
Reid, Robert W.		Roentgenology
Valparaiso		
DeWitt, C. H.		Diagnostic roent.
Vincennes		
Moore, Robert G.	21 N. 3d St.	Roentgenology
IOWA		
Anamosa		
Rawson, E. G.		Diagnostic roent.
Atlantic		
Greenleaf, W. S.		Roentgenology
Belle Plaine		
Newland, Don H.		Diagnostic roent.
Cedar Rapids		
Erskine, Arthur W.	120, 3d Ave. S.E.	Radiology
Gillies, Carl L.	120, 3d Ave., S.E.	Radiology
Council Bluffs		
Hawkins, Emmet L.	542 Franklin St.	Radiology
Des Moines		
Burcham, Thos. A.	410, 6th Ave.	Radiology
Dubuque		
Webb, Harold H.	1596 Delhi St.	Roentgenology *
Eagle Grove		
Christensen, John R.		Roentgenology
Independence		
Shellito, J. C.		Roentgenology
Iowa City		
Gibbon, W. H.	Iowa St.	Radiology
Kerr, H. Dabney	Iowa St.	Radiology
LeMars		
Larsen, W. W.		Roentgenology *
Marshalltown		
Talley, Louis F.	Main St. and 3d Ave.	Roentgenology
New Hampton		
Chandler, Orville B.		Radiology
Ottumwa		
Herrick, John F.	103 S. Market St.	Radiology
Spilman, H. A.	103 S. Market St.	Diagnostic roent.
Waterloo		
Britt, Otis W.	525 Sycamore St.	Radiology

NAME	ADDRESS	TYPE OF SERVICE
KANSAS		
Beloit		
Vallette, H. B.	.....	Diagnostic roent.
Eldorado		
Dinsmore, W. S.	324 W. Central St.	Diagnostic roent.
Ellsworth		
Hissem, H. Z.	.....	Diagnostic roent.
Fort Scott		
Prichard, J. R.	209 S. Main St.	Radiology
Kansas City		
Allen, Lewis G.	601 Minnesota Ave.	Radiology
Tice, Galen M.	3818 Cambridge St.	Radiology
Lawrence		
Jones, H. T.	107 E. 8th St.	Diagnostic roent.
Salina		
Brittain, O. R.	105 S. 7th St.	Roentgenology
Topeka		
Finney, Guy A.	901 Kansas Ave.	Roentgenology
Floersch, M. A.	700 Kansas Ave.	Roentgenology
Owen, Arthur K.	901 Kansas Ave.	Roentgenology
Wichita		
Frost, E. J.	227 E. Douglas Ave.	Radiology
Swope, Opie W.	105 N. Main St.	Radiology
Webb, J. A. H.	106 N. Main St.	Radiology
KENTUCKY		
Ashland		
Cooper, John Ralph	1540 Winchester Ave.	Roentgenology *
Lexington		
Harding, Donnan B.	190 N. Upper St.	Radiology
Lewis, John C.	159 W. Main St.	Roentgenology
Thompson, J. Campbell	207 N. Upper St.	Roentgenology
Louisville		
Bell, J. C.	332 W. Broadway	Radiology
Enfield, Chas. D.	332 W. Broadway	Radiology
Fugate, I. T.	608 S. 4th St.	Radiology
Herrmann, Henry C.	608 S. 4th St.	Radiology
Johnson, Sydney E.	101 W. Chestnut St.	Roentgenology
Keith, D. Y.	412 W. Chestnut St.	Radiology
Keith, J. P.	412 W. Chestnut St.	Radiology
Owensboro		
Gillim, P. D.	415 St. Ann St.	Roentgenology
Shelbyville		
Bayless, B. W.	.....	Roentgenology
Winchester		
Browne, I. H.	.....	Diagnostic roent.
LOUISIANA		
Alexandria		
Barker, H. O.	327, 3d St.	Roentgenology
Baton Rouge		
Williams, Lester J.	221, 3d St.	Radiology
Houma		
St. Martin, T. I.	.....	Roentgenology
Mansfield		
Curtis, H. P. D.	.....	Roentgenology
Monroe		
Moore, Daniel M.	128 De Siard St.	Roentgenology
New Orleans		
Ané, J. Novell	921 Canal St.	Roentgenology Radium therapy
Bowie, E. R.	3503 Prytania St.	Radiology
Fortier, L. A.	2000 Tulane Ave.	Radiology
Gately, T. T.	2000 Tulane Ave.	Radiology
Granger, Amédeé	921 Canal St.	Roentgenology
Henderson, W. F.	3500 Prytania St.	Radiology
Menville, L. J.	921 Canal St.	Radiology
Samuel, E. C.	3503 Prytania St.	Radiology
Shreveport		
Anderson, Johnson R.	1130 Louisiana Ave.	Roentgenology *
Barrow, S. C.	624 Travis St.	Radiology
Edwards, H. G. F.	624 Travis St.	Roentgenology
Harwell, W. R.	624 Travis St.	Radiology
Rutledge, C. P.	1030 Highland Ave.	Radiology
Thomas, A. Jerome	624 Travis St.	Roentgenology
MAINE		
Auburn		
Cunningham, C. H.	66 Goff St.	Diagnostic roent.
Bangor		
Ames, Forrest B.	489 State St.	Roentgenology
Hunt, Barbara	224 State St.	Radiology
Portland		
Cummings, Edson S.	12 Pine St.	Diagnostic roent.
Lamb, Frank W.	131 State St.	Diagnostic roent.
Thaxter, Langdon T.	22 Arsenal St.	Roentgenology
Waterville		
Goodrich, John P.	214 Main St.	Diagnostic roent.
MARYLAND		
Baltimore		
Ashbury, Howard E.	101 Read St.	Roentgenology *
Baetjer, Fredk. H.	4 E. Madison St.	Roentgenology
Burnam, Curtis F.	1418 Eutaw Pl.	Radiology
Evans, John	101 Read St.	Roentgenology
Feldman, Maurice	2425 Eutaw Pl.	Diagnostic roent.
Hill, Eben C.	Johns Hopkins Med. Sch.	Roentgenology
Kahn, Max	2 W. Read St.	Roentgenology *
Ostro, Marcus	1810 Eutaw Pl.	Roentgenology
Pierson, J. W.	1107 St. Paul St.	Roentgenology *
Sax, Benjamin J.	2237 Eutaw Pl.	Diagnostic roent.
Walton, Henry J.	104 W. Madison St.	Roentgenology
Waters, Charles A.	1100 N. Charles St.	Roentgenology
Wright, Harold E.	101 Read St.	Diagnostic roent.
Crisfield		
Collins, C. E.	.....	Roentgenology
Cumberland		
Cowherd, F. G.	122 S. Centre St.	Roentgenology
Easton		
Hammond, William T.	.....	Roentgenology
Frederick		
Derr, John S.	35 E. Church St.	Roentgenology *
Hagerstown		
Hoffmeier, F. N.	King and Antietam Sts.	Roentgenology
Perry Point		
Moxness, B. A.	Veterans Administration Hospital	Roentgenology
MASSACHUSETTS		
Boston		
Blackett, Chas. W.	35 Bay State Road	Roentgenology
Butler, P. F.	35 Bay State Road	Radiology
Coffin, W. K.	416 Marlboro St.	Roentgenology
Ellsworth, S. W.	520 Beacon St.	Roentgenology
Friedman, Harry F.	270 Commonwealth Ave.	Radiology
George, Arial W.	43 Bay State Rd.	Roentgenology
Hampton, A. O.	Massachusetts Gen. Hosp.	Radiology
Healy, Thomas R.	370 Marlborough St.	Roentgenology *
Holmes, Geo. W.	265 Charles St.	Radiology
Leonard, Ralph D.	43 Bay State Rd.	Roentgenology
Liebman, Charles	341 Commonwealth Ave.	Roentgenology
MacMillan, A. S.	483 Beacon St.	Roentgenology
Martin, William C.	Massachusetts General Hosp.	Roentgenology
McCarthy, H. L.	479 Beacon St.	Roentgenology
Meachen, John W.	475 Commonwealth Ave.	Roentgenology *
Moloney, Albert M.	47 Bay State Rd.	Radiology
Morrison, Lawrie B.	370 Marlborough St.	Roentgenology *
O'Brien, Fredk. W.	465 Beacon St.	Radiology
Osgood, Herman A.	144 Commonwealth Ave.	Roentgenology *
Ott, George J.	344 Commonwealth Ave.	Roentgenology
Perkins, Roy S.	520 Commonwealth Ave.	Roentgenology
Ritvo, Max	485 Commonwealth Ave.	Radiology
Robins, Samuel A.	636 Beacon St.	Roentgenology
Sosman, M. C.	721 Huntington Ave.	Roentgenology *
Vance, R. G.	264 Beacon St.	Roentgenology
Vogt, E. C.	300 Longwood Ave.	Roentgenology
Watts, Henry F. R.	6 Monadnock St., Dor.	Diagnostic roent.
Wheatley, Frank E.	520 Beacon St.	Roentgenology
Whelan, Charles	395 Commonwealth Ave.	Radiology
Brockton		
Packard, Loring B.	305 Prospect St.	Roentgenology
Brookline		
Bogan, Isabel K.	193 Aspinwall Ave.	Roentgenology
Chelsea		
Hutchinson, R. W.	U. S. Naval Hospital	Roentgenology
Dalton		
Sullivan, P. J.	.....	Roentgenology
Fall River		
Lindsey, John H.	151 Rock St.	Roentgenology
Tennis, M. N.	538 Prospect St.	Radiology
Fitchburg		
Jennings, Curtis H.	82 Mechanic St.	Roentgenology
Haverhill		
McFee, William D.	345 Main St.	Roentgenology
Popoff, Constantine	26 Summer St.	Roentgenology *
Sproull, John	50 Merrimack St.	Radiology
Holyoke		
Harrington, Elmer J.	199 Chestnut St.	Roentgenology *
Lawrence		
Burgess, Charles J.	37 Whitman St.	Radiology
Leary, Alfred J.	477 Essex St.	Roentgenology Radium therapy
Lowell		
Mehan, Joseph A.	4 Park St.	Roentgenology
Stewart, Ralph C.	226 Central St.	Roentgenology
Malden		
Warren, Alva H.	6 Pleasant St.	Roentgenology
New Bedford		
Bonnar, James M.	90 Hillman St.	Roentgenology
North Adams		
Bunce, James W.	85 Main St.	Roentgenology
Crawford, J. W.	191 E. Main St.	Radiology
Northampton		
Janes, Benjamin F.	211 Elm St.	Roentgenology
Somerville		
Blake, Allen H.	81 College Ave., W. Som.	Roentgenology
Springfield		
Davis, Ernest L.	20 Maple St.	Roentgenology
Horrigan, A. J.	20 Maple St.	Roentgenology
Jackson, Howard L.	146 Chestnut St.	Roentgenology
Powers, Richard T.	25 Maple St.	Radiology
Van Allen, Harvey W.	19 Maple St.	Radiology
Webster		
Bragg, Leslie R.	260 Main St.	Diagnostic roent.
Worcester		
Cook, Philip H.	27 Elm St.	Roentgenology Radium therapy
Langill, Morton H.	36 Pleasant St.	Roentgenology
MICHIGAN		
Adrian		
Chase, A. W.	130 Toledo St.	Diagnostic roent.
Ann Arbor		
Donaldson, Samuel W.	326 N. Ingalls St.	Roentgenology
Hodges, Fred J.	University of Michigan	Roentgenology
Jacox, Harold W.	1116 Lincoln Ave.	Radiology
Peirce, Carleton B.	1313 E. Ann St.	Radiology
Battle Creek		
Gorsline, C. S.	29 W. Michigan St.	Roentgenology
Kolvoord, Theodore	25 W. Michigan St.	Roentgenology
Upson, W. O.	North Ave. and Emmett St.	Roentgenology
Bay City		
Moffatt, Francis J.	16th and Franklin Sts.	Roentgenology
Detroit		
Berris, J. M.	10 Peterboro St.	Diagnostic roent.
Birkelo, Carl C.	28 W. Adams Ave.	Roentgenology

NAME	ADDRESS	TYPE OF SERVICE
Bloom, Arthur R.	5057 Woodward Ave.	Roentgenology
Chene, George C.	1551 Woodward Ave.	Roentgenology
Dempster, Jas. H.	5761 Stanton Ave.	Diagnostic roent.
Dickson, B. R.	337 W. Grand Blvd.	Roentgen Therapy Radium Therapy
Doub, Howard P.	2799 W. Grand Blvd.	Radiology
Eisen, Paul	258 S. Algonquin St.	Roentgen therapy Radium therapy
Evans, Wm. A.	10 Peterboro St.	Radiology
Hall, E. Walter	10 Peterboro St.	Radiology
Hasley, Clyde K.	1553 Woodward Ave.	Radiology
Jarre, Hans A.	1551 Woodward Ave.	Radiology
Kenning, J. C.	1551 Woodward Ave.	Roentgenology
Leucutia, Traian	10 Peterboro St.	Radiology
Lim, W. K.	2201 E. Jefferson Ave.	Radiology
Loucks, R. E.	337 W. Grand Blvd.	Radiology
Minor, Edward G.	3001 W. Grand Blvd.	Roentgenology
Reynolds, Lawrence	10 Peterboro St.	Radiology
Sanderson, S. E.	5057 Woodward Ave.	Radiology
Shore, O. J.	3001 W. Grand Blvd.	Roentgenology
Stevens, Rollin H.	1551 Woodward Ave.	Radiology
Ulbrich, Henry L.	1122 E. Grand Blvd.	Roentgenology *
Weaver, Clarence E.	113 Martin Pl.	Roentgenology
Wilcox, Leslie F.	10 Peterboro St.	Radiology
Witwer, E. R.	3839 Brush St.	Radiology
Flint		
Macduff, R. Bruce	112 W. Kearsley St.	Roentgenology *
Grand Rapids		
Menees, Thomas O.	Wealthy St. and Plymouth Rd.	Radiology
Moore, Vernor M.	110 E. Fulton St.	Radiology
Muller, John H.	26 Sheldon Ave.	Radiology
Williams, Alden H.	26 Sheldon Ave.	Radiology
Jackson		
Cooley, R. M.	524 Lansing Ave.	Roentgenology
Kugler, J. C.	1905 Grovedale Ave.	Roentgenology
Porter, H. W.	1020 E. Michigan Ave.	Radiology
Kalamazoo		
Crane, A. W.	420 S. Rose St.	Roentgenology *
Jackson, John B.	420 S. Rose St.	Roentgenology *
Lansing		
Davenport, Carroll S.	1210 W. Saginaw St.	Roentgenology *
Huntley, Fred M.	908 N. Capitol Ave.	Roentgenology
Monroe		
Moll, T. M.	120 Maple Blvd.	Diagnostic roent.
Pontiac		
Church, J. E.	35 W. Huron St.	Roentgenology
Pool, H. H.	35 W. Huron St.	Roentgenology
Saginaw		
Anderson, Wm. K.	316 S. Porter St.	Diagnostic roent.
St. Johns		
Ho, T. Y.		Diagnostic roent.
Traverse City		
Minor, E. B.	208½ E. Front St.	Diagnostic roent.
Ypsilanti		
Pillsbury, Chas. B.	23B N. Washington St.	Diagnostic roent.

MINNESOTA

Duluth		
Clement, Gage	901 E. 1st St.	Radiology
McNutt, John R.	3d St. and 5th Ave., E.	Roentgenology
Mankato		
Wentworth, A. J.	Main and Broad Sts.	Radiology
Minneapolis		
Allison, R. G.	74 S. 9th St.	Roentgenology *
Fleming, A. S.	900 Nicollet Ave.	Radium therapy
Hansen, Cyrus Owen	412 Delaware St., S.E.	Radiology
Harrington, Chas. D.	78 S. 9th St.	Radiology
Nordin, G. T.	74 S. 9th St.	Roentgenology *
Rigler, Leo G.	412 Delaware St., S.E.	Diagnostic roent.
Sagel, Jacob	412 Delaware St., S.E.	Radiology
Sundt, Mathias	2323, 6th St. S.	Roentgenology
Ude, Walter H.	74 S. 9th St.	Roentgenology *
Rochester		
Bowing, Harry H.	102, 2d Ave., S.W.	Roentgenology Radium therapy
Camp, John D.	Mayo Clinic	Diagnostic roent.
Desjardins, A. U.	Mayo Clinic	Roentgen therapy Radium therapy
Fricke, Robert E.	Mayo Clinic	Radium therapy
Kirklin, B. R.	Mayo Clinic	Diagnostic roent.
Leddy, Eugene T.	Mayo Clinic	Radium therapy
Sutherland, Charles G.	Mayo Clinic	Diagnostic roent.
Weber, Harry M.	Mayo Clinic	Diagnostic roent.
St. Cloud		
Kern, M. J.	St. Cloud Clinic Bldg.	Roentgenology *
St. Paul		
Aurelius, J. R.	350 St. Peter St.	Roentgenology *
Schons, Edward	25 W. 4th St.	Radiology

MISSISSIPPI

Gulfport		
Van Ness, Edwin B.	1005, 32d Ave.	Roentgenology
Houston		
Williams, J. Rice		Roentgenology *
Laurel		
McCormick, H. G.	531, 7th St.	Roentgenology
McComb		
Ratcliff, M. D.	Maryland and 4th Sts.	Diagnostic roent.
Natchez		
Beekman, Marcus	307 Franklin St.	Diagnostic roent.

MISSOURI

Columbia		
Smith, Wm. L.	S. 6th St.	Radiology
Helden		
Thompson, Wm. G.		Radiology
Joplin		
McGaughey, H. D.	607 Main St.	Radiology
Kansas City		
Dann, David S.	306 E. 12th St.	Roentgenology
Deweese, E. R.	904 Grand Ave.	Roentgenology
Donaldson, Clyde O.	1103 Grand Ave.	Radiology
Lockwood, Ira H.	304 E. 12th St.	Radiology
McCandless, O. H.	308 E. 12th St.	Roentgenology
McDermott, J. L.	1103 Grand Ave.	Radiology
Skinner, Edward H.	1103 Grand Ave.	Radiology
Virden, C. E.	1103 Grand Ave.	Radiology
St. Joseph		
McGlothlan, A. B.	824 Edmond St.	Roentgenology *
Ravold, Henry J.	401 N. 6th St.	Radiology
St. Louis		
Ernst, Edwin C.	3720 Washington Ave.	Radiology
McCutchen, L. G.	508 N. Grand Blvd.	Roentgenology *
Moore, Sherwood	600 S. Kingshighway	Radiology
Mueller, Wilbur K.	607 N. Grand Blvd.	Roentgenology
Peden, Joseph C.	634 N. Grand Blvd.	Roentgenology
Sante, L. R.	634 N. Grand Blvd.	Radiology
Spinzig, Edgar W.	508 N. Grand Blvd.	Roentgenology
Titterington, P. F.	508 N. Grand Blvd.	Roentgenology
Zink, Oscar C.	5535 Delmar Blvd.	Roentgenology
Springfield		
Cole, Paul F.	200 Pershing Ave.	Radiology
Webster Groves		
Kerrigan, Joseph A.	421 S. Elm St.	Diagnostic roent.

MONTANA

Billings		
Bridenbaugh, J. H.	208 N. Broadway	Radiology
Watkins, C. F.	115 N. 28th St.	Radiology
Great Falls		
Walker, Dora	503, 1st Ave. N.	Roentgenology

NEBRASKA

Beatrice		
Penner, H. G.	113 S. 5th St.	Roentgenology *
Rush, Weaver A.	607 W. Court St.	Radiology
Grand Island		
Woodruff, R. C.	306½ N. Locust St.	Roentgenology
Hastings		
Rork, Lee W.	119 N. Hastings Ave.	Roentgenology *
Lincoln		
Kail, Carl	1307 N St.	Roentgenology *
Rowe, Edward W.	128 N. 13th St.	Radiology
Smith, Roscoe L.	1307 N St.	Radiology
Omaha		
Fouts, Roy W.	107 S. 17th St.	Radiology
Hardy, Clyde C.	101 S. 17th St.	Roentgenology
Hunt, Howard B.	42d and Dewey Ave.	Roentgenology
Kelly, J. F.	107 S. 17th St.	Radiology
Overgaard, A. P.	107 S. 17th St.	Roentgenology
Ross, W. L.	407 S. 16th St.	Roentgenology
Tyler, Albert F.	103 S. 17th St.	Radiology
Scottsbluff		
Plehn, Frank W.	1818 Broadway	Roentgenology

NEVADA

Reno		
Piersall, C. E.	120 N. Virginia St.	Radiology

NEW HAMPSHIRE

Concord		
Eveleth, Fred S.	12 Court St.	Roentgenology
Dover		
Chesley, Harry O.	507 Central Ave.	Roentgenology
Hanover		
Sycamore, Leslie K.	2 Maynard St.	Radiology
Manchester		
Merrill, A. S.	944 Elm St.	Roentgenology
Nashua		
Davis, S. G.	168 Main St.	Roentgenology
Rock, T. F.	77 Main St.	Diagnostic roent.

NEW JERSEY

Asbury Park		
Herrman, William G.	501 Grand Ave.	Radiology
Atlantic City		
Bradley, Robert A.	1616 Pacific Ave.	Radiology
Kaighn, Charles B.	905 Pacific Ave.	Roentgenology
Beachwood		
Swan, Guy Howard		Roentgenology *
Camden		
Roberts, Joseph E.	403 Cooper St.	Roentgenology
East Orange		
Marquis, W. James	S. Munn and Central Aves.	Roentgenology
Reitter, George S.	144 Harrison St.	Diagnostic roent.
Elizabeth		
Vogel, Herbert A.	1060 E. Jersey St.	Diagnostic roent.
Ward, Leo J.	137 W. Jersey St.	Radiology
Englewood		
Edwards, J. Bennett	Engle St.	Roentgenology
Flemington		
Tompkins, G. B.		Diagnostic roent.
Hoboken		
Broeser, Henry V.	105 Newark St.	Roentgenology
Jersey City		
Maver, William W.	532 Bergen Ave.	Roentgenology
Perlberg, Harry J.	921 Bergen Ave.	Roentgenology
Montclair		
Schimmelpfennig, R. D.	65 N. Fullerton Ave.	Roentgenology
Stevens, J. Thompson	55 Park St.	Radiology

NAME	ADDRESS	TYPE OF SERVICE
Newark		
Baker, Charles F.	198 Clinton Ave.	Roentgenology *
Friedman, Milton	31 Lincoln Park	Roentgen therapy
		Radium therapy
Furst, Nathan James.	190 Johnson Ave.	Roentgenology *
Gelber, Louis J.	41 Lincoln Ave.	Roentgenology
Hood, Philip G.	19 Lincoln Park	Diagnostic roent.
May, Ernst A.	965 Broad St.	Radiology
Pomeranz, Raphael.	31 Lincoln Park	Roentgenology *
Reissman, Erwin.	31 Lincoln Park	Diagnostic roent.
Wyatt, Joseph H.	135 Clinton Ave.	Radiology
Passaic		
Terhune, Percy H.	171 Paulison Ave.	Roentgenology
Paterson		
Golding, Harry N.	180 Carroll St.	Roentgenology
Roemer, Jacob.	213 Broadway	Radiology
Perth Amboy		
Klein, Edward F.	136 Market St.	Radiology
Rochelle Park		
Pallen, C. de S.		Radium therapy
Succasunna		
Plume, C. A.		Diagnostic roent.
Summit		
Tidaback, John D.	382 Springfield Ave.	Roentgenology
Trenton		
Davison, R. Winthrop	200 W. State St.	Radiology
NEW MEXICO		
Albuquerque		
Warden, M. R.	715 E. Grand Ave.	Diagnostic roent.
NEW YORK		
Albany		
Howard, W. P.	46 Willett St.	Roentgenology
Murnane, I. J.	182 Washington Ave.	Radiology
Prentice, D. D.	59 Clinton Ave.	Radiology
Amsterdam		
Wilson, David.	156 Guy Park Ave.	Roentgenology
Auburn		
Austin, Sedgwick E.	54 E. Genesee St.	Diagnostic roent.
Bull, Harry S.	156 Genesee St.	Roentgenology
Bay Shore		
Cohoon, Carl Wm.	72a S. Clinton Ave.	Roentgenology
Binghamton		
Kann, Ulysses S.	69 Walnut St.	Radiology
Shaw, Perry H.	93 Main St.	Diagnostic roent.
Brooklyn		
Bayles, William H.	1901 Bedford Ave.	Diagnostic roent.
Bell, A. L. Loomis.	340 Henry St.	Radiology
Cramp, George W.	506, 6th St.	Diagnostic roent.
Currin, Francis W.	1136 Dean St.	Radiology
Dannenberg, Max.	1464 Eastern Parkway	Roentgenology
Eastmond, Charles.	483 Washington Ave.	Roentgenology *
Ehrenpreis, B.	576 Eastern Parkway	Roentgenology
Elliott, F. E.	122, 76th St.	Diagnostic roent.
Friedmann, Asa B.	41 Eastern Parkway	Radiology
Gold, Louis.	835 Willoughby Ave.	Diagnostic roent.
Goldfarb, L.	608 Ocean Ave.	Diagnostic roent.
Goodman, Moses.	2100, 66th St.	Radiology
Held, Louis A.	175 Hewes St.	Roentgenology *
Howes, William E.	152 Clinton St.	Roentgenology
Ingraham, Ruth.	121 DeKalb Ave.	Diagnostic roent.
Kaufman, Julius.	201 Eastern Parkway	Roentgenology
Krupp, D. Dudley.	178 Pennsylvania Ave.	Roentgenology *
Levine, Isaac.	1219, 49th St.	Diagnostic roent.
Liberson, F.	612 Eastern Parkway	Diagnostic roent.
Masterson, John J.	401, 76th St.	Roentgenology
Mendelson, Emanuel.	132 Parkside Ave.	Roentgenology *
Muller, Fredk. W.	U. S. Naval Hospital	Roentgenology *
Nathanson, Louis.	700 Ocean Ave.	Radiology
Rendich, Richard A.	116 Remsen St.	Roentgenology
Schenck, Samuel G.	1538 President St.	Diagnostic roent.
Schiff, Charles H.	1000 Park Pl.	Diagnostic roent.
Segall, L. Martin.	4701, 15th Ave.	Roentgenology *
Strahl, Milton I.	255 New York Ave.	Diagnostic roent.
Taormina, Louis J.	1093 Gates Ave.	Roentgenology
Teperson, H. I.	744 Eastern Parkway	Radiology
Wasch, Milton G.	871 Park Pl.	Radiology
Weinstein, Samuel.	1138 Eastern Pkwy.	Roentgenology *
Westing, Siegfried.	180 Lenox Rd.	Diagnostic roent.
Buffalo		
Barnes, John M.	875 Lafayette Ave.	Roentgenology
Bayliss, J. W.	472 Delaware Ave.	Roentgenology *
DeGraff, Ralph M.	131 Linwood Ave.	Diagnostic roent.
Gian-Franceschi, J. S.	610 Niagara St.	Diagnostic roent.
Heiminiak, M. J.	929 Fillmore Ave.	Diagnostic roent.
Koenig, Edward C.	100 High St.	Diagnostic roent.
Lape, C. Pearley.	183 Oxford Ave.	Diagnostic roent.
Levy, Sidney H.	33 Allen St.	Diagnostic roent.
Levyn, Lester.	40 North St.	Roentgenology
Moses, Chester D.	333 Linwood Ave.	Diagnostic roent.
Orr, Clifford R.	1093 Ellicott St.	Roentgenology *
Schreiner, B. F.	113 High St.	Radiology
Smith, B. B.	333 Linwood Ave.	Diagnostic roent.
Thompson, A. W.	135 Linwood Ave.	Diagnostic roent.
Cooperstown		
Cruttenden, Harry L.		Radiology
Cortland		
Sornberger, Frank F.	16 Church St.	Roentgenology
Elmhurst		
Startz, Irving S.	40-16 Gleane St.	Roentgenology *
Elmira		
Bennett, John A.	222 W. Church St.	Roentgenology
Far Rockaway		
Lesoff, Morris J.	856 Central Ave.	Roentgenology *
Rivkin, Hyman.	918 Cornaga Ave.	Diagnostic roent.
Glens Falls		
Birdsall, Edgar.	140 Glen St.	Roentgenology
Gloversville		
Denham, H. C.	12 Prospect Ave.	Roentgenology
Hempstead		
Robin, Nathaniel H.	131 Fulton Ave.	Roentgenology
Williams, P. A.	131 Fulton Ave.	Roentgenology *
Hornell		
Mitchell, George W.	208 Main St.	Roentgenology
Hudson		
Harris, Rosslyn P.	427 Warren St.	Diagnostic roent.
Ithaca		
Larkin, Leo P.	114 N. Tioga St.	Radiology
Lackawanna		
Cotter, Stephen V.	1457 Abbott Rd.	Roentgenology
Mechanicsville		
Green, Geo. A.		Diagnostic roent.
Middletown		
Schmitz, Walter A.	18 Highland Ave.	Roentgenology
Mount Kisco		
Vaughan, F. E.		Diagnostic roent.
Newburgh		
Miller, Raymond A.	212 Grand St.	Diagnostic roent.
Reed, Charles B.	205 Liberty St.	Roentgenology
New Rochelle		
Duckworth, Willard D.	421 Huguenot St.	Roentgenology
Chiiko, Alexander J.	41 Halcyon Terrace	Roentgenology *
New York City		
Abbott, Hodson A.	622 W. 168th St.	Roentgenology
Arons, Isidore	133 E. 58th St.	Roentgen therapy
		Radium therapy
Bendick, Arthur J.	100 E. 94th St.	Radiology
Besser, Herman	66 E. 56th St.	Roentgenology
Boone, Wm. H.	230 Riverside Dr.	Roentgenology *
Bower, Jacob	133 E. 58th St.	Roentgenology
Busby, Archibald H.	133 E. 71st St.	Diagnostic roent.
Cameron, William H.	511 Fifth Ave.	Radium therapy
Carty, John R.	525 E. 68th St.	Roentgenology
Cole, Lewis Gregory.	36 E. 61st St.	Roentgenology *
Dieffenbach, W. H.	50 Central Park West	Radiology
Dixon, Geo. S.	218, 2d Ave.	Diagnostic roent.
Duffy, James J.	2 W. 106th St.	Roentgen therapy
		Radium therapy
Ehrlich, David Ernest	27 W. 86th St.	Radiology
Ferguson, A. B.	420 E. 59th St.	Roentgenology
Fierstein, Jacob	1018 E. 163d St.	Roentgenology *
Fineman, Solomon	133 E. 58th St.	Diagnostic roent.
Francis, William J.	121 Madison Ave.	Roentgenology
Freid, Jacob R.	1049 Park Ave.	Radiology
Fried, Herman	320 W. 87th St.	Roentgenology *
Friedland, Henry	2021 Grand Concourse	Diagnostic roent.
Friedman, Lewis J.	315 E. 18th St.	Roentgenology
Friedman, Max	1940 Grand Concourse	Diagnostic roent.
Friedmann, Joseph	53 W. 73d St.	Radiology
Froehlich, Eugene	28 W. 74th St.	Roentgenology
Glassman, I.	138 E. 36th St.	Diagnostic roent.
Golden, Ross.	622 W. 168th St.	Roentgenology
Gottlieb, Charles	210 W. 79th St.	Roentgenology
Groeschel, L. B.	40 W. 72d St.	Radiology
Herendeen, Ralph E.	30 E. 40th St.	Roentgenology *
Hirsch, Henry	2075 Grand Concourse	Radiology
Hirsch, I. Seth	136 E. 64th St.	Radiology
Howard, J. Campbell.	40 E. 61st St.	Roentgenology *
Imboden, Harry M.	30 W. 59th St.	Radiology
Jacobs, Alexander W.	40 W. 72d St.	Roentgen therapy
		Radium therapy
Jaches, Leopold.	100 E. 94th St.	Radiology
Johnson, Redford K.	30 E. 40th St.	Diagnotic roent.
Kaplan, Edward E.	103 E. 29th St.	Diagnostic roent.
Kaplan, Ira I.	55 E. 86th St.	Roentgen therapy
		Radium therapy
Kaplan, Morris.	130 Henry St.	Diagnostic roent.
Kasabach, Haig H.	622 W. 168th St.	Radiology
Kassow, Israel O.	1840 Grand Concourse	Diagnostic roent.
Kraft, Ernest.	120 W. 70th St.	Roentgenology *
Kurz, Bernard.	1235 Grand Concourse	Diagnostic roent.
Landsman, I. J.	391 E. 149th St.	Diagnostic roent.
Lapman, Charles.	2754 Grand Concourse	Diagnostic roent.
Law, Frederick M.	140 E. 54th St.	Diagnostic roent.
Lefrak, Louis.	251 E. Broadway	Diagnostic roent.
Lenz, Maurice.	1049 Park Ave.	Roentgen therapy
		Radium therapy
Levin, Isaac.	57 W. 57th St.	Radiology
LeWald, L. T.	140 E. 54th St.	Roentgenology
Lewis, Raymond W.	115 E. 61st St.	Diagnostic roent.
Merrill, E. Forrest.	30 W. 59th St.	Roentgenology *
Meyer, William Henry	20th St. and 2d Ave.	Roentgenology *
Ossip, Abraham.	152 Henry St.	Diagnostic roent.
Philips, Herman B.	9 W. 68th St.	Radiology
Pomeranz, M. M.	911 Park Ave.	Radiology
Posner, Herman Paul.	467 E. 138th St.	Diagnostic roent.
Powell, C. B.	2368, 7th Ave.	Diagnostic roent.
Quimby, Adoniram J.	5 E. 57th St.	Roentgenology
Radding, Moses B.	545 West End Ave.	Roentgenology *
Remer, John.	200 W. 59th St.	Roentgen therapy
Robinson, G. Allen.	2 E. 77th St.	Radium therapy
Robinson, William T.	322 W. 72d St.	Roentgenology
Ryan, E. J.	421 W. 113th St.	Roentgenology
Schechter, Samuel.	315 W. 86th St.	Diagnostic roent.
Scholz, Thomas.	38 E. 85th St.	Diagnostic roent.
Schwartz, C. W.	33 E. 68th St.	Roentgenology
Schwartz, Irving.	1150, 5th Ave.	Diagnostic roent.
Spillman, Ramsay.	115 E. 61st St.	Diagnostic roent.
Steiner, Joseph M.	170 East End Ave.	Roentgenology *
Stewart, Wm. H.	222 W. 79th St.	Roentgenology
Swenson, Paul C.	622 W. 168th St.	Diagnostic roent.
Taylor, Henry K.	333 West End Ave.	Diagnostic roent.
Unger, Arthur S.	135 E. 74th St.	Roentgenology
Valenti-Mestre, A.	129 Broad St.	Roentgenology
Weinberg, Tobias B.	310 E. 15th St.	Roentgenology
Weiss, Leopold D.	36 W. 59th St.	Roentgenology
Weitzner, Samuel F.	1018 E. 163d St.	Radiology
White, Stephen.	57 W. 57th St.	Roentgenology
Wood, Francis C.	421 W. 113th St.	Roentgen therapy
		Radium therapy
Niagara Falls		
Scott, Walter Roger.	598 Pine Ave.	Radiology

NAME	ADDRESS	TYPE OF SERVICE
Ossining		
Wyser, Dorean D.	210 Spring St.	Roentgenology
Oswego		
Lavine, Reuben	25 W. Oneida St.	Diagnostic roent.
Wallace, H. M.	140 W. 5th St.	Roentgenology
Peekskill		
Snowden, Fred A.	108 Depew St.	Roentgenology
Port Chester		
West, Theodore	324 Westchester Ave.	Radiology
Poughkeepsie		
Davison, Chester O.	Lincoln Ave. and Reade Pl.	Radiology
Richmond Hill		
Voltz, Albert L.	11520 Myrtle Ave.	Radiology
Rochester		
Almy, Max A.	16 N. Goodman St.	Roentgenology
Davidson, Sol C.	277 Alexander St.	Radiology
Flynn, James M.	277 Alexander St.	Radiology
Fray, Walter W.	74 Marlborough Rd.	Roentgenology *
Green, Joseph H.	277 Alexander St.	Roentgenology
Sanders, L. J.	213 Alexander St.	Roentgenology
Thomas, Camp C.	476 Lake Ave.	Roentgenology
Warren, Stafford L.	199 Barrington St.	Radiology
Saratoga Springs		
King, Earl H.	75 Caroline St.	Roentgenology
Syracuse		
Calliva, Salvatore	510 Prospect Ave.	Diagnostic roent.
Childs, Donald S.	713 E. Genesee St.	Roentgenology *
Hadley, Lee A.	713 E. Genesee St.	Roentgenology
Henry, Lucas S.	116 E. Castle St.	Roentgenology
Potter, Carlton F.	820 S. Crouse Ave.	Roentgenology
Rullson, Foster C.	713 E. Genesee St.	Roentgenology
Troy		
Hull, Thurman A.	505 Broadway	Diagnostic roent.
Utica		
Hall, Robert C.	258 Genesee St.	Roentgenology
Powers, M. T.	250 Genesee St.	Roentgenology
Watertown		
Pawling, Jesse R.	100 Stone St.	Roentgenology Radium therapy
White Plains		
Duckworth, R. D.	170 Maple Ave.	Roentgenology
Sherman, Herbert	99 Church St.	Roentgenology
NORTH CAROLINA		
Asheville		
Murphy, G. W.	20 Battery Park Ave.	Roentgenology *
Charlotte		
Lafferty, Robert H.	127 W. 7th St.	Radiology
Phillips, Clyde C.	127 W. 7th St.	Radiology
Durham		
Reeves, R. J.	Duke Hospital	Radiology
Goldsboro		
Ivey, H. B.	139 W. Walnut St.	Roentgenology Radium therapy
Greensboro		
Rhudy, Booker E.	101 N. Elm St.	Roentgenology
Shohan, Joseph	122 S. Green St.	Roentgenology *
Otsea		
Shawhan, Rezin C.	Veterans Administration Hospital	Diagnostic roent.
Raleigh		
Noble, Robert P.	131 W. Hargett St.	Roentgenology *
Rocky Mount		
Fleming, Major I.	104 S. Franklin St.	Roentgenology
Spencer		
Sigman, F. G.	600, 4th St.	Roentgenology *
Statesville		
McElwee, R. S.	Stearns Bldg.	Roentgenology
Winston-Salem		
Rousseau, J. P.	310 W. 4th St.	Radiology
NORTH DAKOTA		
Bismarck		
Berg, H. Milton	221, 5th St.	Roentgenology *
Fargo		
Rothnem, Thos. Peter.	807 Broadway	Roentgenology
Grand Forks		
Woutat, H. G.	318 DeMers Ave.	Roentgenology
Minot		
Gates, Russell	20, 4th Ave. S.W.	Roentgenology *
OHIO		
Akron		
Beals, John A.	444 N. Main St.	Diagnostic roent.
Selby, John Hunter	159 S. Main St.	Roentgenology
Stall, A. H.	525 E. Market St.	Radiology
Stewart, J. E.	159 S. Main St.	Roentgenology
Ashtabula		
Collander, P. J.	217 Park Pl.	Roentgenology
Canton		
Peters, Chester M.	300 McKinley Ave., N.W.	Radiology
Peterson, E. O.	116 Cleveland Ave., N.W.	Roentgenology *
Shorb, John E.	427 Market Ave. S.	Roentgenology *
Chillicothe		
Holmes, Ralph W.	57 W. Main St.	Roentgenology
Cincinnati		
Bader, E. R.	628 Elm St.	Radiology
Brodberger, Wm. L.	Madison Rd. and East Hill Ave.	Roentgenology
Brown, Samuel	707 Race St.	Roentgenology *
Doughty, Wm. M.	628 Elm St.	Radiology
Goosmann, Charles	22 W. 7th St.	Radiology
Lange, Sidney	19 Garfield Place	Radiology
Reineke, Harold G.	Burnet Ave. and Goodman St.	Roentgenology *
Warne, B. M.	19 Garfield Place	Roentgenology

NAME	ADDRESS	TYPE OF SERVICE
Cleveland		
Bettelheim, Frederick.	1020 Huron Rd.	Radiology
Farmer, H. L.	10515 Carnegie Ave.	Radiology
Freedman, Edward F.	25 Prospect Ave., N.W.	Roentgenology
Freedman, Eugene	3395 Scranton Rd.	Roentgenology *
Hill, Walter C.	10515 Carnegie Ave.	Radiology
LeFevre, Walter I.	9400 Euclid Ave.	Roentgenology
Mahrer, H. A.	10515 Carnegie Ave.	Roentgenology *
May, Raymond V.	10515 Carnegie Ave.	Radiology
May, Robert J.	10515 Carnegie Ave.	Radiology
McCoy, Charles C.	2065 Adelbert Rd.	Roentgenology *
McNamee, Edgar P.	1422 Euclid Ave.	Diagnostic roent.
Nichols, B. H.	2020 E. 93d St.	Radiology
Osmond, John D.	10515 Carnegie Ave.	Radiology
Portmann, U. V.	2045 E. 90th St.	Roentgen therapy Radium therapy
Steel, David	2065 Adelbert Rd.	Roentgenology
Thomas, M. A.	10515 Carnegie Ave.	Radiology
West, James H.	10515 Carnegie Ave.	Radiology
Columbus		
Bowen, Chas. F.	332 E. State St.	Radiology
Fulton, Huston F.	327 E. State St.	Roentgenology *
Kirkendall, Ben R.	137 E. State St.	Roentgen therapy Radium therapy
Means, Hugh J.	683 E. Broad St.	Radiology
Miller, W. H.	328 E. State St.	Radiology
Reinert, Edward	247 E. State St.	Radiology
Riebel, Frank A.	15 W. Goodale St.	Roentgenology
Sims, Geo. P.	W. State St. and Davis Ave.	Diagnostic roent.
Welrauk, H. V.	9 Buttles Ave.	Roentgenology
Dayton		
Burnett, Harry W.	201 S. Main St.	Radiology
Delscamp, W. H.	201 S. Main St.	Roentgenology
Jones, Lynn M.	117 S. Main St.	Roentgenology *
Price, Rudolph J.	201 S. Main St.	Radiology
Fremont		
Philo, D. W.	209 W. State St.	Roentgenology
Gallipolis		
Wilson, Milo		Radiology
Hamilton		
Benzing, George	R.D. 3	Radiology
Lakewood		
McDowell, John R.	15701 Detroit Ave.	Roentgenology
Shetter, North W.	14600 Detroit Ave.	Roentgenology
Lima		
Thomas, Herbert A.	131 N. Elizabeth St.	Radiology
Massillon		
Holston, J. D.	876 Amherst Rd., N.E.	Diagnostic roent.
Piqua		
Spencer, Robert D.	400 N. Main St.	Roentgenology
Salem		
Heck, Stanton	1160 E. State St.	Roentgenology
Sandusky		
Hill, Lyle S.	526 Columbus Ave.	Roentgenology
Springfield		
Brubaker, E. R.	8 W. Main St.	Radiology
Ultes, Will	E. High St. and Burnett Rd.	Roentgenology
Steubenville		
Miller, J. E.	401 Market St.	Radiology
Toledo		
Kahn, Dalton	237 Michigan St.	Roentgenology
Murphy, John T.	421 Michigan St.	Radiology
Warren		
Gauchat, Paul C.	197 W. Market St.	Roentgenology
Simpson, D. G.	775 Mahoning Ave., N.W.	Roentgenology
Youngstown		
Bachman, M. H.	314 N. Phelps St.	Roentgenology *
Baker, Edgar C.	Youngstown Hospital	Radiology
Heberding, John	151 W. Rayen Ave.	Roentgenology
Heeley, J. A.	Madison and Pennsylvania Aves.	Roentgenology
Meyer, N. N.	23 Central Square	Diagnostic roent.
Zanesville		
Holston, J. G. F.	620 South St.	Roentgenology
Loebell, Maurice A.	531 Market St.	Roentgenology *
OKLAHOMA		
Marlow		
Talley, C. N.		Diagnostic roent.
McAlester		
Johnston, James C.	216½ E. Choctaw Ave.	Roentgenology
Oklahoma City		
Heatley, John E.	119 N. Broadway	Diagnostic roent.
Myers, Ralph Emerson	1200 N. Walker St.	Radiology
Roland, Marion M.	119 N. Broadway	Radiology
Okmulgee		
Ming, Charles M.	220 S. Morton Ave.	Roentgenology
Shawnee		
Hughes, J. E.	14 E. 9th St.	Diagnostic roent. Radium therapy
Sulphur		
Annadown, P. V.		Diagnostic roent.
Tulsa		
Larrabee, W. S.	108 W. 6th St.	Roentgenology
Lhevine, Morris B.	108 W. 6th St.	Diagnostic roent.
Stuart, Leon H.	7 W. 6th St.	Roentgenology
OREGON		
Eugene		
Barnett, Arthur F.	130 E. Broadway	Roentgenology
Portland		
Butler, Frank E.	410 Taylor St.	Roentgenology
Dixon, William	193, 11th St.	Diagnostic roent.
Haworth, Wallace	193, 11th St.	Roentgenology
Palmer, Dorwin L.	432 Morrison St.	Radiology
Rees, Sherman E.	608 E. 31st St.	Roentgenology *
Walker, Ralph C.	364 Washington St.	Radiology
Wight, Otis B.	193, 11th St.	Radium therapy
Woolley, Ivan M.	410 Taylor St.	Roentgenology *

PENNSYLVANIA

NAME	ADDRESS	TYPE OF SERVICE
Allentown		
Smyth, Thos. L.	111 N. 8th St.	Radiology
Troxell, Wm. C.	941 Hamilton St.	Radiology
Altoona		
Alleman, George E.	1410, 12th Ave.	Roentgenology
Bliss, Gerald D.	1220, 13th Ave.	Radiology
Ashland		
Mulligan, P. B.		Roentgenology
Bethlehem		
Leibert, H. F.	338 Wyandotte St.	Roentgenology
Bryn Mawr		
Bromer, Ralph S.	Bryn Mawr Ave.	Roentgenology
Chester		
Egbert, Walter E.	601 E. 13th St.	Roentgenology *
Sharpe, A. Maxwell.	708 Sproul St.	Roentgenology *
Clearfield		
Reiley, W. E.		Radiology
Coatesville		
Perkins, J. A.	367 Chestnut St.	Diagnostic roent.
Conshohocken		
Burvill-Holmes, E.		Diagnostic roent.
Danville		
Hawley, S. J.		Roentgenology *
DuBois		
Gann, G. W.	49 E. Long Ave.	Roentgenology
McCormick, A. F.	Maple Ave.	Roentgenology
Easton		
Parry, Leo D.	32 N. 3d St.	Radiology
Quiney, James J.	309 Bushkill St.	Radiology
Erie		
Putts, B. Swayne	117 W. 8th St.	Roentgenology
Greensburg		
McMurray, H. A.	107 S. Main St.	Roentgenology
Singer, John J.	229 S. Main St.	Roentgenology*
Hanover		
Bortner, C. E.	123 York St.	Diagnostic roent.
Harrisburg		
Ritzman, A. Z.	234 State St.	Roentgenology
Hatboro		
Shoemaker, Robt., 3d.		Roentgenology
Hazleton		
Dessen, Louis A.	4 W. Broad St.	Roentgenology
Huntingdon		
Keichline, John M.		Radiology
Johnstown		
Stewart, H. M.	406 Main St.	Radiology
Kingston		
Howell, G. L.	204 Wyoming Ave.	Roentgenology
Lancaster		
Davis, Henry B.	530 N. Lime St.	Roentgenology
		Radium therapy
Snoke, Paul O.	129 College Ave.	Radiology
Swab, Robert D.	23 E. Walnut St.	Roentgenology
Lebanon		
Boger, John D.	341 Cumberland St.	Diagnostic roent.
Lewistown		
Weaver, O. M.	12 S. Main St.	Roentgenology
Lock Haven		
Green, Geo. D.		Roentgenology
McKeesport		
Snedden, A. R.	522 Walnut St.	Roentgenology
Meadville		
Gingold, Joseph R.	476 Pine St.	Roentgenology
New Castle		
Cooper, J. R.	111 E. North St.	Radiology
New Kensington		
Brown, Prentiss A.	901, 5th Ave.	Roentgenology
Norristown		
Campbell, Raymond F.	514 Swede St.	Diagnostic roent.
Perkasie		
Strouse, O. H.		Roentgenology
Philadelphia		
Barker, Walter C.	Chestnut and 20th Sts.	Radiology
Bird, G. C.	1415 W. Erie Ave.	Roentgenology
Bishop, Paul A.	8th and Spruce Sts.	Radiology
Borzell, Francis F.	4940 Penn St.	Roentgenology
Bowen, David R.	8th and Spruce Sts.	Radiology
Bruck, Samuel	2104 Pine St.	Roentgenology
Carpenter, Samuel A.	2265 N. 16th St.	Roentgenology
Chamberlain, W. E.	3401 N. Broad St.	Radiology
Downs, E. E.	Barnes and Hartel Sts.	Radiology
Edeiken, Louis	1832 Spruce St.	Radiology
Farrell, John T., Jr.	235 S. 15th St.	Roentgenology *
Feldstein, Sidney L.	1601 Walnut St.	Roentgenology
Frank, Jacob W.	1730 Spruce St.	Roentgenology *
Gershon-Cohen, J.	255 S. 17th St.	Roentgenology
Henry, Robert W.	768 S. 15th St.	Roentgenology
Hutton, Frederick C.	1409 N. 15th St.	Roentgenology *
Koenig, Carl F.	1734 Harrison St.	Roentgenology
Kornblum, Karl	3400 Spruce St.	Radiology
Manges, Willis F.	235 S. 15th St.	Roentgenology *
Merchant, Albert K.	3401 N. Broad St.	Roentgenology *
Miller, Garrett R.	1942 N. Broad St.	Radiology
Morgan, J. D.	2226 Delancey St.	Radiology
Newcomet, W. S.	3501 Baring St.	Radiology
O'Boyle, Cyril P.	4930 Walnut St.	Roentgenology *
Pancoast, Henry K.	3400 Spruce St.	Radiology
Pendergrass, Eugene P.	3400 Spruce St.	Radiology
Percival, M. F.	S. Broad and Wolf Sts.	Radiology
Pfahler, George E.	1321 Spruce St.	Radiology
Post, Joseph W.	1930 Chestnut St.	Roentgenology
Rieger, Chas. L. W.	230 N. Broad St.	Roentgenology *
Rosenbaum, George	1521 Spruce St.	Radiology
Schmidt, Wm. Henry.	1601 Walnut St.	Radiology
Sender, Arthur C.	1311 W. Allegheny Ave.	Roentgenology
Solis-Cohen, Leon.	1923 Spruce St.	Roentgenology
Spackman, E. W.	1824 Chestnut St.	Roentgenology
Stull, H. Tuttle.	3260 N. Broad St.	Roentgenology
Sturr, Robert P.	1823 Spruce St.	Roentgenology
		Radium therapy
Vastine, Jacob H.	1930 Chestnut St.	Radiology
Widmann, B. P.	250 S. 18th St.	Radiology
Wiley, Louis R.	1512 N. 15th St.	Roentgenology
Zulick, J. Donald.	2008 Walnut St.	Roentgenology
Philipsburg		
Benson, Andrew L.		Roentgenology
Pittsburgh		
Alley, Reuben G.	4800 Friendship Ave.	Diagnostic roent.
Caldwell, C. S.	520 S. Aiken Ave.	Diagnostic roent.
Fisher, J. W.	500 Penn Ave.	Radiology
Goldsmith, Maurice F.	3459 Fifth Ave.	Roentgenology *
Gorfinkell, Julius.	3401, 5th Ave.	Roentgenology
Grier, G. W.	500 Penn Ave.	Radiology
Grimm, Homer W.	500 Penn Ave.	Radiology
Johnston, Z. A.	500 Penn Ave.	Roentgenology
McAdams, Edward C.	119 S. Highland Ave.	Roentgenology
McCullough, John F.	500 Penn Ave.	Radiology
McCullough, Thos. L.	500 Penn Ave.	Roentgenology
Ray, William B.	110 E. Stockton Ave.	Roentgenology *
Robinson, Ralph V.	500 Penn Ave.	Radiology
Schaefer, Charles N.	500 Penn Ave.	Radiology
Schumacher, F. L.	500 Penn Ave.	Roentgenology
Sterrett, William J.	110 Stockton Ave.	Roentgenology *
Reading		
Meter, Edward G.	230 N. 5th St.	Roentgenology *
Travis, Richard C.	230 N. 5th St.	Roentgenology
		Radium therapy
Rochester		
McCaskey, F. H.		Roentgenology
Scranton		
Jackson, Byron H.	327 N. Washington Ave.	Radiology
Milkman, Louis A.	327 N. Washington Ave.	Roentgenology
von Poswik, Gisela.	217 Jefferson Ave.	Roentgenology
Shippensburg		
Stewart, Alexander.		Roentgenology
Tamaqua		
Hinkel, William H.	243 E. Broad St.	Roentgenology
Uniontown		
Hess, George H.	104 Morgantown St.	Roentgenology
Upper Darby		
Clagett, A. H.	Long Lane Ct. Apt.	Roentgenology
West Chester		
Penneli, Howard Y.	Chester County Hospital	Roentgenology
Wilkes-Barre		
DesJardins, A.	N. River and Auburn Sts.	Roentgenology *
Rogers, Lewis L.	38 N. Franklin St.	Roentgenology
Wilkinsburg		
McGregor, William J.	901 Wood St.	Roentgenology
Williamsport		
Wurster, L. E.	416 Pine St.	Roentgenology
York		
Bennett, John H.	1253 W. Market St.	Radiology
Landes, L. S.	454 W. Market St.	Diagnostic roent.
Lutz, J. Fletcher.	141 E. Market St.	Roentgenology

RHODE ISLAND

NAME	ADDRESS	TYPE OF SERVICE
Newport		
Wheatland, Marcus F.	84 John St.	Diagnostic roent.
Pawtucket		
Unger, Oscar M.	109 Broadway	Diagnostic roent.
Providence		
Albert, Simon	108 Waterman St.	Roentgenology *
Batchelder, Philip.	188 Waterman St.	Roentgenology
Benjamin, Emanuel W.	485 Broadway	Radiology
Boyd, James F.	105 Waterman St.	Radiology
Farrell, John T.	385 Westminster St.	Diagnostic roent.
Gerber, Isaac.	201 Waterman St.	Radiology
Kelley, Jacob S.	153 Smith St.	Diagnostic roent.
McNally, D. Raymond	513 Hope St.	Roentgenology
Woonsocket		
Garrison, Norman S.	38 Hamlet Ave.	Radiology

SOUTH CAROLINA

NAME	ADDRESS	TYPE OF SERVICE
Anderson		
Wrenn, Frank.	620 N. Fant St.	Radiology
Charleston		
Rudisill, Hillyer, Jr.	Lucas and Calhoun Sts.	Radiology
Taft, Robert B.	105 Rutledge Ave.	Radiology
Columbia		
Pitts, Thomas A.	1515 Marion St.	Radiology
Rodgers, Floyd D.	1417 Hampton St.	Radiology
Florence		
Hay, Percy D., Jr.	111 W. Cheves St.	Radiology
Greenville		
Judy, W. S.	107 E. North St.	Radiology
Spartanburg		
Sheridan, William M.	116 W. Main St.	Radiology

SOUTH DAKOTA

NAME	ADDRESS	TYPE OF SERVICE
Aberdeen		
McCarthy, Paul V.		Roentgenology
Pierre		
McLaurin, A. A.		Roentgenology *
Sioux Falls		
Nessa, Nellus J.	301 S. Minnesota Ave.	Roentgenology
Watertown		
Koren, F.	Broadway and Kemp Ave.	Roentgenology *

TENNESSEE

NAME	ADDRESS	TYPE OF SERVICE
Chattanooga		
Bogart, F. B.	546 McCallie Ave.	Roentgenology
Frere, John Marsh	707 Walnut St.	Roentgenology *
Marchbanks, S. S.	546 McCallie Ave.	Radiology
Johnson City		
Hankins, John L.	920 W. Maple St.	Roentgenology
Knoxville		
Abercrombie, Eugene.	603 W. Main Ave.	Roentgenology
Casenburg, S. F.	601 Walnut St.	Roentgenology
McCampbell, H. H.	614 Walnut St.	Radiology
Memphis		
Bethea, W. R.	899 Madison Ave.	Roentgenology *
Coley, Steve W.	1265 Union Ave.	Roentgenology *
Heacock, Charles H.	20 S. Dunlap St.	Radiology
Herring, J. H.	995 Madison Ave.	Roentgenology
King, J. Cash	915 Madison Ave.	Roentgenology
Lawrence, W. S.	248 Madison Ave.	Radiology
Paine, Robert	248 Madison Ave.	Radiology
Pulliam, H. N.	617 S. McLean Blvd.	Roentgenology
Robinson, W. W.	1291 Union Ave.	Roentgenology
Nashville		
Dillard, Charles E.	1117, 1st Ave. S.	Roentgenology
McClure, C. C.	706 Church St.	Radiology
Shoulders, H. S.	706 Church St.	Roentgenology

TEXAS

Amarillo		
Van Sweringen, Walter	301 Polk St.	Roentgenology
Vaughan, John H.	724 Polk St.	Radiology
Beaumont		
Barr, Richard E.	388 Pearl St.	Radiology
Ledbetter, L. H.	388 Pearl St.	Radiology
White, C. M.	595 Orleans St.	Roentgenology
Corsicana		
Curtis, Richard C.	101 N. Beaton St.	Roentgenology
Dallas		
Beaver, N. B.	1719 Pacific Ave.	Radiology
Martin, Charles L.	3300 Junius St.	Radiology
Martin, J. M.	1719 Pacific Ave.	Radiology
Spangler, Davis	4105 Live Oak St.	Radiology
Eastland		
Caton, J. H.		Roentgenology
El Paso		
Cathcart, J. W.	114 Mills St.	Radiology
Mason, C. H.	114 Mills St.	Radiology
York, M. N.	303 Texas St.	Roentgenology
Fort Worth		
Bond, Tom B.	600 W. 10th St.	Radiology
Hyde, X. R.	600 W. 10th St.	Radiology
Jagoda, S.	1212 W. Lancaster St.	Radiology
O'Bannon, R. P.	1028, 5th Ave.	Radiology
Houston		
Durrance, Fred Y.	1215 Walker Ave.	Roentgenology
Harris, C. P.	1625 Main St.	Roentgenology *
McDeed, W. G.	1215 Walker Ave.	Roentgenology *
McHenry, R. K.	1215 Walker Ave.	Roentgenology
Sauermann, Wm. O.	804 Travis St.	Roentgenology
Lubbock		
Smith, Jerome H.	1301 Broadway	Roentgenology Radium therapy
Mineral Wells		
Yeager, Robt. L.		Roentgenology
San Antonio		
Barron, Wm. Marshall	705 E. Houston St.	Roentgenology *
Hamilton, W. S.	705 E. Houston St.	Diagnostic roent.
Lowry, R. H., Jr.	Station Hospital, Fort Sam Houston	Roentgenology
Ostendorf, W. A.	507½ E. Houston St.	Roentgenology
Sherman		
Henschen, G. E.	500 N. Highland Ave.	Roentgenology *
Temple		
Giles, Roy G.	Scott and White Clinic	Roentgenology *
Powell, Eugene V.	304 S. 22d St.	Radiology
Wilson, R. T.	Scott and White Clinic	Roentgenology *
Waco		
Jenkins, I. Warner	425 Austin Ave.	Radiology
Wichita Falls		
Wilcox, Clark A.	1300, 8th St.	Roentgenology *

UTAH

Ogden		
Weeks, Paul R.	2440 Harrison St.	Roentgenology
Salt Lake City		
Coray, Q. B.	50 E. South Temple St.	Roentgenology
Kerby, James P.	9 Exchange Pl.	Roentgenology *

VERMONT

Burlington		
Caldwell, Nathan R.	Colchester Ave.	Roentgenology *
Robinson, Carl F.	266 Main St.	Roentgenology
Wilson, S. A.	150 Bank St.	Roentgenology *
Rutland		
Cook, Benjamin F.	46 Nichols St.	Diagnostic roent.

VIRGINIA

Lynchburg		
Spencer, Hunter B.	Allied Arts Bldg.	Radiology
Newport News		
Davis, R. A.	2901 West Ave.	Roentgenology
Norfolk		
Eley, Clayton W.	Wood and Church Sts.	Roentgenology *
Petersburg		
Clarkson, Wright	30 Franklin St.	Radiology
Richmond		
Flanagan, E. L.	116 E. Franklin St.	Roentgenology
Hodges, Fred M.	1000 W. Franklin St.	Radiology
Snead, Lawrence O.	1000 W. Franklin St.	Radiology
Tabb, J. Lloyd	118 E. Franklin St.	Roentgenology *
Talley, Daniel D., Jr.	501 E. Franklin St.	Roentgenology *
Whitehead, L. J.	501 E. Franklin St.	Roentgenology *
Roanoke		
Armentrout, John F.	30½ Franklin Rd.	Radiology
McKinney, Joseph T.	30½ Franklin Rd.	Roentgenology *
University		
Archer, Vincent W.		Roentgenology *

WASHINGTON

Longview		
Hayes, Richard	Columbia Clinic	Roentgenology
Seattle		
Bourns, Frank S.	509 Olive St.	Radiology
Dwyer, Maurice F.	1115 Terry Ave.	Radiology
Garhart, Manch N.	1305, 4th Ave.	Radiology
Holtz, Kenneth J.	920, 2d Ave.	Roentgenology
Koenig, Carl E.	509 Olive St.	Roentgenology
Nichols, H. E.	1215, 4th Ave.	Roentgenology
Snively, J. Howard	509 Olive St.	Roentgenology *
Stephens, Lorenzo L.	1215, 4th Ave.	Radiology
Thompson, H. B.	1305, 4th Ave.	Radiology
Thomson, Curtis H.	1305, 4th Ave.	Roentgenology *
Ward, Chas. B.	803 Summit Ave.	Radiology
Spokane		
Aspray, Jos.	407 Riverside Ave.	Radiology
Betts, Arthur	407 Riverside Ave.	Radiology
Tacoma		
Fishel, C. R.	740 St. Helens Ave.	Roentgenology
Hart, Alan L.	315 S. K St.	Radiology
McCarty, E. D.	740 St. Helens Ave.	Roentgenology
Walla Walla		
Johannesson, C. J.	1 W. Main St.	Roentgenology
Yakima		
Cornett, Geo. W.	321 E. Yakima Ave.	Roentgenology *

WEST VIRGINIA

Charleston		
Lambert, A. C.	240 Capitol St.	Roentgenology
Lanman, Everett L.	Brooks St. and Elmwood Ave.	Roentgenology
Fairmont		
Francis, Charles T.	200 Gaston Ave.	Roentgenology
Hollidays-Cove		
Davis, Geo. H.		Diagnostic roent.
Huntington		
MacKenzie, A. R.	955, 4th Ave.	Roentgenology *
Vinson, L. T.	317, 9th St.	Roentgenology
Parkersburg		
Boice, Ralph Homer	717 Ann St.	Roentgenology
Rose, Lonzo O.	510½ Market St.	Radiology
Wheeling		
Bippus, E. S.	77, 16th St.	Roentgenology
Clovis, C. H	2000 Eoff St.	Radiology
Halslip, Norvell L.	2000 Eoff St.	Radiology
Kalbfleisch, W. K.	58, 16th St.	Roentgenology
Quimby, Will A.	1401 Market St.	Radiology

WISCONSIN

Appleton		
McGrath, E. F.	114 W. College Ave.	Radiology
Beloit		
Wilson, Russell F.	431 Olympian Blvd.	Radiology
Eau Claire		
Baird, J. C.	401 S. Barstow St.	Roentgenology
Green Bay		
Olmsted, Austin O.	205 E. Walnut St.	Radiology
Shewalter, G. M.	305 E. Walnut St.	Roentgenology
Troup, R. L.	306 Cherry St.	Roentgenology
Janesville		
Kuegle, F. H.	19 S. Main St.	Roentgenology
Kenosha		
Bowing, Irwin E.	625, 57th St.	Roentgenology
Sokow, Theodore	723, 58th St.	Radiology
LaCrosse		
McLoone, J. E.	319 Main St.	Roentgenology
Madison		
Ellis, Ivan G.	720 S. Brooks St.	Roentgenology
Littig, Lawrence V.	925 Mound St.	Roentgenology
Pohle, E. A.	1300 University Ave.	Radiology
Sisk, J. Newton	16 S. Henry St.	Roentgenology Radium therapy
Marshfield		
Potter, R. P.		Roentgenology
Milwaukee		
Altenhofen, A. R.	152 W. Wisconsin Ave.	Roentgenology
Baumgarten, S.	205 E. Wisconsin Ave.	Roentgenology
Epperson, Paul S.	324 E. Wisconsin Ave.	Roentgenology
Habbe, John Edwin	231 W. Wisconsin Ave.	Roentgenology
Morton, S. A.	3321 N. Maryland Ave.	Roentgenology
Podlasky, Harry B.	425 E. Wisconsin Ave.	Roentgenology
Zmyslony, W. P.	931 W. Mitchell St.	Diagnostic roent.
Neenah		
Greenwood, S. D.		Radiology
Salem		
Fletcher, Wm.		Roentgenology
Superior		
Saunders, Geo.	1501 Tower Ave.	Roentgenology
Waukesha		
Peterson, Geo. E.	831 N. Grand Ave.	Roentgenology

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, FEBRUARY 11, 1933

THE NATION'S HEALTH

In these times of economic depression, with the unwelcome records of personal misfortunes and maladjustments that they inevitably entail, it is comforting to find an encouraging outlook in the trends of public health.[1] In this field of interest, at least, there is no occasion to join the chorus of those who long for "the good old days." Until comparatively recent times, all who had to deal with disease were so bound by the bonds of ignorance that they were almost utterly powerless. It is easy to forget the not so remote days when the true nature of infectious disease was unknown—when, as a popular writer has forcefully commented, "germs were allowed to remain on surgical instruments, cots, and clothing from one patient to infect the next and thus disease and death were passed on in an endless chain."[2] The whole subject of the elimination of the terrors of wound infection forms one of the most brilliant chapters in the history of medicine. But imperfectly were physicians working throughout the ages able to cope with infection and disease. Only when trained research workers devoted themselves to a study of the fundamental causes of disease was significant progress made; more was then accomplished in a half century than in all the past history of the world.

Before the evidences of recent progress in the domain of public health are recorded, optimism should be somewhat tempered by a frank admission of certain shortcomings in our knowledge of the facts. First, mortality and morbidity are not synonymous in their implications in relation to human welfare. It is practically impossible as yet to consult records of sickness, in contrast with death, except in a few selected and circumscribed instances that are far from permitting any broad generalizations. Again, the lack of uniformly dependable statistics is universally recognized. As Britten,[1] senior statistician of the U. S. Public Health Service, has pointed out with regard to the impressions obtained from death rates, much difficulty will arise from increasing accuracy of diagnosis and incompleteness of birth registration. Especially in the case of cancer and the degenerative diseases, the steady improvement in diagnosis has been so great as to make it almost impossible to determine what the true trends are. Furthermore, Britten notes that one of the fundamental changes in the characteristics of the population has been that of its age distribution, reflecting both new levels of health and the influence of immigration. Between 1850 and the present time the percentage of persons 50 years of age and over has nearly doubled.

Admitting the restricted character of information regarding a population for which dependable extensive statistics are fragmentary and of comparatively recent availability, it is nevertheless apparent that in the past thirty years there has been a great decline in the rate of mortality up to about 50 years of age, with no reduction in the highest ages. A comparison of 1920 with 1929 indicates that the same tendencies have persisted in the last decade. One significant trend has been the greater improvement in recent years in the mortality among females. The mortality rates are definitely lower among females at each age at the present time, even during the period of childbearing. This was not true in 1900. It is evident that an astonishing change has taken place in the ages between 10 and 20 years—ages at which the male rates tended to be lower than the female in 1900.

Various commentators have referred with surprise to the favorable mortality showing during the present period of depression. Britten warns that, owing to observed higher mortality in lower wage classes, a rise in mortality might be anticipated at the present time. However, previous history in this country, he adds, will not bear out any such expectation. The major depression cycles in the past fifty years (1875-1879, 1884-1886, 1894-1898, 1914-1915) have tended to show general subnormal mortality rates.[3] The fact that the present phenomenon is by no means unique suggests to Britten that at the end there may be an upward turn in mortality requiring increased vigilance on the part of public health organizations.

It may not be amiss to rehearse a few of the conspicuous indications of progress as presented by the government health experts. The most conspicuous phenomenon in the history of public health in this country has been the reduction in the mortality from acute communicable disease. As a specific illustration of the "lower levels" of such maladies, no annual rates in Chicago have been more than 10 per hundred thousand since 1891 for malaria, since 1895 for smallpox, since 1907 for whooping cough, since 1913 for typhoid and measles, since 1919 for scarlet fever, and since 1923 for diphtheria. Another noteworthy fact is the decrease in mortality from tuberculosis. This is a

1. A recent review, from which some of the statistically established statements above are taken, has been published by Britten, R. H.: Trends of Health in the United States, Pub. Health Rep. **48**: 27 (Jan. 13) 1933.
2. Harris, F. S., and Butt, N. I.: Scientific Research and Human Welfare, New York, Macmillan Company, 1924.
3. Ogburn, W. F., and Thomas, Dorothy S.: The Influence of the Business Cycle on Certain Social Conditions, J. Am. Stat. A. **18**, September, 1922.

world-wide phenomenon and has been in progress, one suspects, for at least a century.

It would be quite unfair to ignore other sides of the picture. As Britten freely admits, with the lessening in the rate of mortality in the younger portions of our population, attention is more and more focused on diseases associated with the breakdown of the bodily organs. The general trend of these diseases is regarded as being upward, even when the age factor is taken into account. Over any long period it is difficult to judge this point for specific diseases. If any one should refer to the deaths by accident and cite the ever-present menace of the automobile, Britten insists that the unwonted fatalities in this category appear to be roughly proportional to the increased use of automobiles. The rate is now more than 25 per hundred thousand. There has apparently been a seasonal shift in mortality in the United States. Formerly mortality was greatest in the summer; now it is greatest in the winter.

Today a clear distinction is made between mortality, that is, the death rate, and positive health, a factor measured at present to some extent through sickness surveys and medical examinations. Unfortunately, comparisons in this respect with the past cannot be made; for data relating to previous periods do not exist, and even if they did there would probably be no basis of comparability.

ABSCESS OF THE BRAIN

There is perhaps no standard means of approach to the surgical treatment of brain abscess. Blindly searching for the abscess is an inadequate and obsolete method, and attempts to evacuate the pus are not always successful even when the abscess is localized. A few years ago, Dandy [1] proposed a method of evacuating pus from chronic abscesses, one or more times if necessary, by means of a needle introduced through a nick in the dura, leaving it there until pus ceased to drip. Dandy neither aspirated nor irrigated, so as to avoid stirring up the infection. The cutaneous wound was then tightly closed. While other procedures have been introduced, no method has been tested sufficiently to warrant making it the standard procedure. Encapsulation is nature's way of limiting a brain abscess, and for this to occur a period of time is essential. A full understanding of how a brain abscess develops will aid in determining the best time to evacuate the pus.

Recently an extensive study of fifteen cases of brain abscess was reported by Globus and Horn.[2] The earliest appearance of an abscess shows a small area of brain tissue crowded with bacteria, leukocytes, erythrocytes and distintegrated nerve tissue. In the center of this area may be seen the blood vessel the thrombosis and rupture of which led to the suppurative process. Several such areas may be present in the brain at this stage, having originated in a thrombosis of different branches of a single blood vessel. As the process goes on, the several areas of suppuration merge to form a single focus. Soon after the thrombosed blood vessel ruptures, a reaction beings at the border of the area consisting of the appearance of many small blood vessels surrounded by lymphocytes, which form a well defined belt round the suppurative area. More and more new blood vessels form until there are several rows of them. These newly formed blood vessels enlarge and become surrounded by denser masses of infiltrating elements. Lymphocytes now leave the perivascular zones and form a lymphocytic infiltration in the surrounding tissue. Hassin [3] has shown that these lymphocytes are finally converted into connective tissue. Lymphocytes also leave the blood stream by going through the vessel wall and wander off into extravascular territory. As the migratory lymphocytes are converted first into fibroblasts and eventually into collagenous structures, they provide material for constructing the abscess capsule. The number of lymphocytes about the abscessed area increases, as well as the number of blood vessels, and the fibroblasts become more numerous. The result is a well organized membrane or capsule composed of vascular and fibrous layers surrounding the abscess. The growth of this capsule may go on for months, depending on the continuous transformation of migrating lymphocytes into fibroblasts and mature connective tissue. The limiting wall about the abscess becomes stronger as the collagenous fibers become denser. These defensive forces working to mobilize mesodermal elements to form a capsule should be allowed to pursue their course, if the abscess does not disrupt normal function and intracranial tension does not advance too rapidly. This is particularly true of abscesses of the frontal lobe.

To what extent can one rely on the process of encapsulation in the treatment of every variety of brain abscess? Dandy partially answered that by suggesting simple puncture to relieve intracranial tension. This method provides time for a dense capsule to form. At any rate, the foremost surgical consideration at first in abscess of the brain is to maintain normal intracranial tension until capsule formation has sufficiently advanced to permit, if necessary, a more adequate surgical procedure. Sometimes a brain abscess is cured spontaneously; in other cases, Dandy has said, just a little surgical help will tide the patient along until he can go on with less help, and finally with no help at all. Simple puncture has proved of value only for chronic abscesses; its use is not satisfactory in cerebellar abscesses. The acute brain abscess presents a less hopeful outlook. Globus and Horn's study indicates that the best treatment for the acute abscess is to permit time to wall off the infection and thus allow an acute abscess to become chronic.

1. Dandy, W. E.: Treatment of Chronic Abscess of the Brain by Tapping: Preliminary Note, J. A. M. A. **87**: 1477 (Oct. 30) 1926.
2. Globus, J. H., and Horn, W. L.: Inherent Healing Properties of Abscess of the Brain, Arch. Otolaryng. **16**: 603 (Nov.) 1932.
3. Hassin, G. B.: Histopathology of Brain Abscess, Arch. Neurol. & Psychiat. **3**: 616 (June) 1920; Histopathologic Studies on Brain Abscess, M. Rec. **93**: 91 (Jan. 19) 1918.

CRYSTALLINE VITAMIN D

The production of antirachitic substances of remarkable potency by suitable irradiation of inactive components of animals and plants represents one of the notable biochemical contributions of recent years to medicine.[1] The most important, if not actually the only, substance that assumes antirachitic potency on exposure to ultraviolet rays is ergosterol, a formerly little known sterol, a crystallizable compound that can be secured in abundance in a state of great purity. The irradiated derivative of ergosterol, viosterol, which is assumed to be comparable if not actually identical in action with vitamin D, may exhibit a physiologic potency many thousand times that of cod liver oil, the foremost antirachitic product that occurs naturally.

It has been apparent for some time that the irradiation products of ergosterol represent a mixture of substances of which only a varying proportion is the active vitamin D. Consequently the question has arisen whether the toxicity known to be exhibited by very large doses of irradiated ergosterol are due to the vitamin itself, so that one could speak properly of hypervitaminosis, or to contaminating derivatives produced by the transformations of the natural sterol. Considerable progress has been made more recently by the fractional purification of the products of ergosterol irradiation resulting in the isolation of crystalline substances of noteworthy potency out of the mixtures formerly obtained. Investigators in several countries have beeen active in this field of research. The latest report, by Professor Windaus[2] of Göttingen, perhaps the leading student of the subject, records the isolation of what appears to be the antirachitic vitamin D in pure crystalline form. At least five other concomitant products of the irradiation process have also been separated—most of them in crystalline form. None of these, including "lumisterin," "tachysterin" and "suprasterin I and II," exhibit antirachitic potency. This is, indeed, a great step in advance. It appears, furthermore, that vitamin D can be formed by further suitable irradiation of the primary alteration products (lumisterin and tachysterin) of ergosterol. The chemistry of the subject has proved to be difficult.

The pure vitamin D of Windaus is remarkably stable, and unlike some of the other vitamins it is scarcely affected under ordinary conditions by oxygen. One milligram (one sixty-fourth grain) of the purest crystalline substance is equivalent to at least 40,000 international D units in antirachitic potency, as tested by biologic methods. The refined products derived by different methods of irradiation used in different laboratories are apparently identical.

In her review of the subject a few months ago, Clouse discussed in detail the much debated question of the possible toxicity of vitamin D. She wrote: "At present it must be said that the case for the existence of a separate toxic factor, distinct from vitamin D, has not been proved. That there is strong evidence for such a factor cannot, however, be denied, and the results of future work must be awaited to settle the point." Windaus and Lüttringhaus have come to the conclusion that the pure vitamin D is not entirely devoid of toxicity. A dose of 0.075 mg., representing 3,000 international D units, is toxic to mice. But tachysterin, which is present in unpurified irradiation products, while inactive as an antirachitic agent, is decidedly more toxic. The relative toxicity of pure vitamin D has been demonstrated to be far less than that of its common contaminants. Whether the naturally occurring vitamin D of cod liver oil is actually identical with the chemically produced compound remains to be ascertained. Nevertheless the investigations here recorded represent a great triumph of scientific research in medicine.

1. These investigations are briefly reviewed by Clouse, Ruth C.: Vitamin D, J. A. M. A. **99**: 215 (July 16), 301 (July 23) 1932.
2. Windaus, Adolf, and Lüttringhaus, A.: Ueber das bestrahlte Ergosterin, Deutsche med. Wchnschr. **58**: 1669 (Oct. 21) 1932.

Current Comment

THE BELGIAN RADIUM MONOPOLY

In this issue, THE JOURNAL prints evidence indicating that Belgium has for some time controlled the output of radium, thereby being largely responsible for the price. Whether Belgium will continue to control the output of radium may depend on the success of a new development in the radium industry, which is expected to produce its first gram of radium this month. In 1930, Mr. LaBine, a well known Canadian mining man, while flying in northwestern Canada noticed peculiar geological formations. After several days' hiking, he and his companion found near the shores of Great Bear Lake uranium-stained manganese ore with infiltrations of pitchblende. They found a vein of pitchblende a few feet below the surface, which they traced for hundreds of feet, and which the *British Medical Journal*[1] says is unusually rich as a source of radium. Already some forty tons of high grade hand-sorted ore has been shipped out of this rugged country by airplane or boat and enough work has been done by the Department of Mines at Ottawa to indicate that the radium yield will be higher than that of the Belgian controlled ores in South Africa. A radium plant has been constructed about sixty miles north of Toronto, with a former assistant to Mme. Curie, in charge. Plans are now being made for marketing. In the opinion of experienced mining men, the Canadian ore can be developed at a profit, owing to the absence of such impurities as vanadium and thorium. If radium from this or other sources is placed on the market at a considerably reduced price, its proper distribution will constitute a special problem, for radium used in the treatment of the sick by those who have an inadequate knowledge of its properties, and an inadequate experience in its use, may do more harm than good.

1. Radium from Canada, Brit. M. J. **2**: 1024 (Dec. 3) 1932.

Medical Economics

THE FINAL REPORT OF THE COMMITTEE ON THE COSTS OF MEDICAL CARE

Report of a Committee of the New Haven Medical Association, Adopted Jan. 25, 1933

During the five years of its existence, the Committee on the Costs of Medical Care has accumulated a vast amount of valuable information regarding the health services which are available to the public of the United States, including not only the ministrations of physicians but also those of nurses, dentists, pharmacists, midwives and technicians. These studies cover such matters as the extent and character of illness, the number, distribution, classification and earning capacity of physicians, the costs of medicines, dental practice and income, certain phases of nursing care, the cults, and a considerable number of studies of the different methods of caring for individuals on a group or community basis.

The value of an enormous collection of facts such as have been brought together in these numerous reports depends on two things: (1) Have the facts been collected in an unbiased way? and (2) What is their value as a basis for action?

In answer to the first of these queries we may, we think, assume that, by and large, the facts are correct. It is difficult to look over the names of the men who constituted the commission and think otherwise. On the other hand, we cannot overlook the statement contained on page 158 in the minority report: "It is the belief of the minority group that the majority report has presented this entire question (i. e., Industrial Medical Service) in a distorted manner. The evils of contract practice are widespread and pernicious. The studies published by the Committee show only the favorable aspects. They were selected because they were considered the most favorable examples of this type of practice in the United States. For each of these plans a score of the opposite kind can be found."

We feel that it is most unfortunate that the stigma of unfairness should have fallen on any report issued by the Committee. This fact is bound to create a suspicion that all their work was conducted with certain preconceived ideas rather than with an open mind and yet such an assumption would, we think, be unfair and, in view of the agreement of the majority and minority on many points, unwarranted.

That the facts have value as a basis for action we have grave doubts. If we may use medical terms, with which we are all familiar, we would say that in our opinion these facts are merely symptoms of one of the diseases of the body politic. They are neither etiological nor pathological. Their interpretation in terms of etiology and pathology is not, we believe, possible with our existing knowledge, or rather lack of knowledge, of the principles which underly man's reaction to his environment. As Professor Hamilton correctly points out, the organization of medicine is merely a part of the general organization of society and is inseparable from it. As Dr. Sydenstricker points out in his personal statement, the recommendations do not deal adequately with the fundamental economic question which the Committee was formed primarily to study and consider. We may add, and we have discussed this matter further in our consideration of chapter III, that we do not believe that either the Committee or any one else is in the possession of the fundamental facts concerning human reactions on which to base any recommendations other than purely temporary and makeshift ones.

From the point of view of the medical profession, the chief facts brought out by the studies of the Committee on the Costs of Medical Care are the following: (1) that a certain proportion of the population fails to receive adequate medical care on account of inability to pay, (2) that this is chiefly due to the uneven incidence of severe illness, (3) that the medical profession is overcrowded, (4) that doctors are unevenly distributed in relation to the regional needs of the country, (5) that there are too few general practitioners and too many specialists, and (6) that many physicians are poorly paid.

There is no question, of course, that there has always been from time immemorial a certain proportion of the population who have failed to receive adequate medical care for one reason or another. Certainly this was not always because the individual was unable to pay, for the medical profession has always adopted a liberal policy toward the poor. One wonders whether it is possible to obtain an accurate estimate of the part played by inability to pay as contrasted with the part played by indolence, ignorance, stupidity, prejudice and other similar characteristics in the poorer sections of the population. It is quite certain, for example, that even in a city well supplied with charitable dispensaries and hospitals one hundred per cent of the sick poor do not receive medical attention, and this is not the fault of the agencies which furnish this.

Another important point which the studies of the Committee stress, although it has been known for ages, is that one difficulty with the costs of medical care lies in their uneven distribution. If the burden of sickness could be spread out thin, so to speak, the question of the costs of medical care would not arise, or certainly would not arise in an acute form. The problem really is to take care of not the average individual or family but the unfortunate individual or family on whom in a particular year, or years, the excessive burden of a prolonged and expensive illness has fallen. These individuals, of course, constitute a comparatively small percentage of the population.

The finding of the Committee that the medical profession is overcrowded corresponds with the conclusion of the Commission on Medical Education that "there are more physicians in the United States per unit of population than in any other country of the world, more than are needed to provide an adequate medical service for the country. It is difficult to see how this situation can be remedied except by a program of education which will reach young men in their early college years and inform them of the overcrowded condition of the medical profession. The medical schools of the United States have persistently raised their standards, especially in the last generation, and since the war particularly most of the better schools have limited the size of their classes. Notwithstanding this, far more young men are trying to get into medicine than are needed, and during the past few years hundreds of these, unable to enter American medical schools, have applied to European medical schools, where there are now a good many of them studying.

The fact that physicians are unevenly distributed was well known long before the report of the Committee on the Costs of Medical Care and was subjected to study and analysis a good many years ago. It is quite evident, we think, that this is an economic problem which is by no means entirely the fault of the physicians but is largely due to the changes in methods of transportation and the habits of rural dwellers.

The question of the oversupply of specialists is one which has been under consideration for some time by various bodies representing the medical profession. It is no doubt true that at the present time the lack of restrictions which would prevent imperfectly trained individuals from representing themselves as specialists has led to a deplorable situation. It has been suggested time and again that no physician should be allowed to practice as a specialist unless he is able to show that he has gone through a course of adequate training. In the medical profession itself certain bodies have been set up, such as the American College of Surgeons and the American College of Physicians, and boards representing other specialties, the purpose of which is to raise the standard of specialists. In the last analysis, however, this cannot be done legally and stringently until public legislatures modify existing regulations of the examining boards and lay down specified requirements for the practice of a specialty.

The fact that the average income of the physician is small is necessarily a reflection of the various situations discussed in the different reports of the Committee on the Costs of Medical Care. The crowding of physicians into large cities, into which also the cultists flock, leads to excessive competition and is largely responsible for some of the reprehensible practices, such as fee splitting, in which the weaker members of the profession have indulged. There has been a tendency on the part of practitioners to increase their overhead expenses unnecessarily. It does not require an extensive equipment to conduct a general practice, although in country districts where laboratories and technical assistance are not available more extensive equipment may be needed than is necessary in the city. Many men equip their offices with elaborate and expensive machinery which is needed for the investigation of only a small percentage of patients, with the result that they are adding to their overhead and are tempted to use this machinery

unnecessarily and to charge for its use. We have not yet reached the stage where the mechanization of medicine is more important than hand and brain work, and it is doubtful if we ever shall reach such a stage.

The portion of the final report which most interests the medical profession is chapter III, which contains the proposals for altering the organization of the profession. We wish first to comment on the first sentence or two of this chapter.

The first sentence reads as follows: "There is a growing conviction that social evolution may be guided wisely and that it is statesmanlike to formulate the objectives of such evolution."

This sentence implies that the so-called social sciences have reached a stage which permits them to guide social evolution wisely. Is this true? We think not. The so-called social sciences are no more sciences than medicine is. Like medicine they are a mixture of science and art, or shall we say science and imagination. Like medicine also they must be founded on facts regarding human beings and their reactions to their environment. Medicine has been accumulating facts for centuries, while the social sciences as fact-finders, if not in their swaddling clothes, are certainly not beyond the diaper age. The social sciences as fully organized agencies date back only to the nineteenth century and are at present about in the stage in which medicine was in the eighteenth century, when its literature was flooded with pseudoscientific doctrines based on insufficient facts, or on the vivid imagination of its exponents. This first sentence, then, is an excellent example of what Henshaw Ward has called "thobbing," one of those convenient portmanteau words which indicates "wishful thinking."

The second sentence in chapter III reads as follows: "What is true of society is true of medical service, for as long as society is on the march, medical service will inevitably be on the march, too, and should have a clear vision of the goal ahead."

This sentence too is reminiscent of a certain food that is commonly served with pork or duckling. Medical service *has* been marching along for centuries and will doubtless continue to march along irrespective of anything we may do. But medicine has been a ghastly failure so far as producing prophets is concerned. It is only necessary to look back at the changes of the past twenty-five years to realize the impossibility of looking ahead for any considerable period of time, nor do we feel, in the light of existing conditions, that the experts in the social sciences have yet developed that telescopic vision which the Committee, kindly but mistakenly, attributes to the medical profession. It seems to us that until many, many more basic facts relating to man and his reaction to his social environment have been collected and analyzed we, as well as the social scientists, will continue to see "as through a glass darkly." It is, in these circumstances, rather difficult to visualize distant goals.

We have commented at length on these opening sentences of chapter III because it seems to us that they indicate quite clearly the point of view of those who signed the majority report. It is by no means an uncommon point of view; in fact, it is the point of view usually taken by those individuals, frequently most kindly and altruistic, who are governed by their hearts rather than their heads. In our opinion it is a highly fallacious and unscientific point of view, and inasmuch as it clearly indicates one of the major premises which motivate the subsequent discussion, we are, naturally, suspicious of the soundness of that discussion and the plans which the Committee advocates in it.

Briefly stated, what the majority report of the Committee proposes is the organization of medical services in the form of groups connected with existing hospital or teaching centers, or with hospitals subsequently to be built, working under local boards. These local boards, which one infers would be mainly composed of laymen, may consist of existing hospital boards in some places, but in other places they would be elected by popular vote or appointed by municipal or county officers. Each center would be under the financial and administrative control of "a well trained executive, experienced in hospital and clinic administration and with a broad social background and a firm grasp of social as well as administrative problems." The professional personnel of such a center would be administered through an elected or appointed executive committee which would have the right to nominate members of the staff for promotion, retirement or removal. As an alternative, this function might be given to the professional personnel. In all matters primarily professional, the staff would have control subject to approval by the board and the director. It is assumed that all, or nearly all, the practicing physicians and dentists of an area served by such a center would become members of the staff.

The basis of remuneration would be "according to each practitioner's competence and responsibilities" and would be determined by the board of trustees, the director, and the chief of service or the executive committee of the staff. The rôle of the family practitioner would be prominent and respected. For such practitioners the center would choose men with special aptitudes and training, with wide general knowledge of medicine, and some insight into psychology and social conditions. Each patient would be primarily under the charge of the family practitioner of his choice, provided the latter was not already fully burdened, and might at his option change to one of the other physicians.

Your committee feels that it is merely necessary to read over the outline of this scheme to become aware of certain very serious practical difficulties. Under the majority report the cost to the individual (patient) would be paid by voluntary insurance or by taxation. It has been proved that voluntary insurance has not been successful in Europe and has been supplanted by compulsory insurance. With either of the latter schemes the whole plan of necessity would come under the jurisdiction of the state and would bring with it all the evils of state medicine. It requires no seventh son of a seventh son to see that the control of medical groups by boards of laymen politically appointed would very soon result in friction of the most undesirable kind. While the early boards of directors might be reasonably well fitted for their positions, that is to say, as well fitted as laymen could be, it would not be long before the slimy tentacles of politics would find their way into the organization and we feel certain that the result would be disastrous. Of one thing we feel sure, and that is that such a method would be bound to make the costs of medical care higher than they are at present. We may be quite sure that this plan of bureaucratizing medicine would result, as all political jobs result, in the following things: (1) the job would be done badly, (2) it would be done expensively, (3) it would, in some places, be done corruptly and (4) individual initiative, the prime factor in social adjustment, would be crippled. For these reasons your committee feels that the plan offered by the majority members of the Committee on the Costs of Medical Care is impracticable as a widespread general plan and would not result either in a lowering of the costs of medical care or in improvement in the administration of it.

It may fairly be asked whether the Committee has in mind any substitute plan. The socialization of medicine is already with us to some extent, as several of the reports of the Committee on the Costs of Medical Care definitely indicate. It has not always taken the same form; in fact, it has appeared in different forms at different places. It has not always worked successfully. Whether socialization of medicine is to spread, and to what extent and in what forms it is to spread, are problems which are by no means entirely dependent on the reactions of medical men or the medical group, including in this term dentists, nurses, technicians, and so on. Whatever developments result, they will be part of the general changes through which society is passing in its evolution. The maladjustment of medical service, which led to the formulation of the reports of the Committee on the Costs of Medical Care, is, at least in part, as old as the hills and is only one of a series of maladjustments of which the present economic maladjustment is perhaps the most striking and outstanding. We do not believe that any man or any group of men can wisely interfere in this natural evolutionary process. Indeed, we would go further than this and point out that in our opinion it is probably just about as sensible in the present state of knowledge to try and control organic evolution as it is social evolution. We believe that physicians, including the members of this society, should keep themselves informed regarding changes which are going on in the relation of medicine to the public, that they should attempt to estimate dispassionately the various bearings of different schemes proposed on the efficiency of medical service to the public and that they should take an active interest in the organization and promotion of methods for equalizing the costs of medical care and promoting

the general health of the public. We do not believe that any one relatively inelastic scheme, such as is proposed by the Majority Report of the Committee on the Costs of Medical Care, will be satisfactory in all parts of the United States with its diversified conditions. In brief, we believe that whatever changes take place should take place through evolution and not through revolution. Reformers are always in a hurry, and too often their worthy but mistaken efforts to improve conditions, which would naturally have bettered themselves in time, has ultimately resulted in reactions which led to an actual retardation of the very improvements which they desired to bring about.

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Monday and Wednesday from 9:45 to 9:50 a. m. (central standard time) over Station WBBM (770 kilocycles, or 389.4 meters).

The subjects for the week are as follows:

February 13. Prominent Men and Heart Disease.
February 15. The Human Chemical Laboratory.

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

February 18. George Washington's Health.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARIZONA

Bill Passed.—H. 64, proposing that nothing in the Medical Practice Act shall prohibit "the practice of religion or treatment by prayer," has passed the house.

Bills Introduced.—H. 58 proposes to create a board of naturopathic examiners and to regulate the practice of naturopathy. Naturopathic licentiates are to be permitted to designate themselves "doctor" or "physician" and to make and sign death certificates. No educational qualifications except graduation from a regularly chartered school of naturopathy are to be required of applicants. H. 46 proposes that all applicants for licenses to practice the healing art, as a condition precedent to examination by their respective "professional" boards, must pass examinations in anatomy, physiology, pathology, chemistry, bacteriology and hygiene, to be given by a board of examiners in the sciences. H. 80 proposes to accord to hospitals, supported in whole or in part by private charity and caring for persons injured through the fault of another, liens on all rights of action, suits, claims, judgments, compromises or settlements accruing to the injured persons by reason of their injuries.

CALIFORNIA

Bills Introduced.—A. 318, to amend an act to regulate the sale of poisons, approved March 6, 1907, proposes (1) to provide that the registration of any registered pharmacist may be revoked on conviction of violating any of the narcotic provisions of the act; (2) to make it "unlawful for any person to open or maintain, to be resorted to by other persons, any place where opium . . . or hemp or loco weed . . . is sold or given away to be smoked on the premises," and for any person to resort to such a place; (3) to make it legal for registered nurses to acquire and possess, without written orders from licensed physicians, hypodermic syringes and needles; (4) to define "physician" to include licensed osteopaths; (5) to prescribe a procedure for forfeiting vehicles used in the unlawful transportation of narcotic drugs, and (6) to permit physicians in good faith to prescribe or furnish narcotic drugs to patients suffering with incurable diseases, ailments or injuries other than narcotic addiction, and to require physicians prescribing or furnishing narcotics to habitual users to report that fact by registered mail to the division of narcotic enforcement. S. 160 and A. 695 propose to authorize the insurance commissioner to license persons, associations or corporations to engage in the business of issuing contracts for furnishing medical, hospital, nursing or dental services. The insurance commissioner is to require each applicant to deposit $10,000 in cash or in approved securities, or a bond for that amount, to guarantee the faithful performance of the applicant's contracts. Exempted from the provisions of the bill are (1) hospitals, infirmaries or clinics operated by schools or churches; (2) organizations working under the lodge system, labor unions, and (3) associations of employees of any single employer. A. 651, to amend the workmen's compensation act, proposes, in effect, to make compensable disability from any disease arising out of any employment covered by the act. A. 795 proposes to prohibit the maintenance and operation of x-ray machines without licenses from the department of professional and vocational standards. Licensed physicians and dentists are excepted from the provisions of the bill. The license to be issued by the department would authorize "the use of such machine in treatment of the public or in production of roentgenographs." A. 900, to amend the workmen's compensation act, proposes, in effect, to permit chiropractors to render the "medical" treatment which the act requires employers to tender to injured employees.

COLORADO

Annual Registration Due March 1.—All practitioners of medicine and surgery holding licenses to practice in Colorado are required by law to register annually before March 1, with the secretary-treasurer of the board of medical examiners, and to pay a fee of $2, if a resident of Colorado, or $10, if a nonresident. Failure to pay this fee within the time stated automatically suspends the right of a licentiate to practice while delinquent. If he nevertheless continues to practice he is subject to the penalties provided by law for practicing medicine without a license. Failure to pay this fee for three consecutive years results in the automatic cancellation of a delinquent practitioner's license to practice.

Bills Introduced.—S. 285, to amend the pharmacy practice act, proposes to permit licensed drug dealers, not registered pharmacists, whose places of business are not less than five miles from a licensed pharmacist, to sell certain drugs, medicines and poisons in original sealed packages, prepared by or under the supervision of registered pharmacists. H. 118, to amend the chiropody practice act, proposes to permit licensed chiropodists "to examine and diagnose diseases of the human foot and the medical and mechanical treatment thereof and the surgical treatment of abnormal nails, corns, warts and callosities of the feet and the superficial treatment of bunions and other abnormalities peculiar to the feet, and . . . to use local anesthetics upon the feet as incidental to such treatment." Licentiates are to be permitted to use "Doctor" or "Dr." before their names provided the "Chiropodist" or "Podiatrist" follows their proper names. H. 335 and S. 360, seeking to amend the nursing practice act, propose (1) to require applicants for licenses to practice professional nursing to be graduates of accredited high schools and of training schools for nurses of, or affiliated with, hospitals maintaining educational standards required by the board, requiring at least three years' training and giving systematic courses of instruction, and (2) to require all licentiates to pay an annual registration fee of $1. S. 366 proposes to repeal the law requiring physicians to register annually with the board of medical examiners.

GEORGIA

Bills Introduced.—H. 323, to amend the pharmacy practice act, proposes to require all applicants for registration as pharmacists to be graduates of schools of pharmacy recognized by the board of pharmacy and, in addition, to have twelve months of practical experience in a place where prescriptions of physicians are dispensed by licensed pharmacists. Under the present law, applicants can be licensed after examination if they have had thirty-six months' actual experience in a pharmacy or have graduated from a school of pharmacy. H. 141 proposes to create a state board of chiropody examiners and regulate the practice of chiropody. Chiropody (podiatry) is defined as "the diagnosis, medical, surgical, mechanical, manipulative and electrical treatment limited to the ailments of the human foot and leg." Chiropodists are to be prohibited from performing any amputation or using any anesthetic other than local.

ILLINOIS

Society News.—The Decatur Medical Society heard Dr. Francis L. Lederer, Chicago, discuss "Modern Concepts in the Diagnosis and Treatment of Sinus Conditions," January 24.——Dr. Benjamin Goldberg, Chicago, addressed the Lake County Medical Society in Waukegan, January 10, on "Recent Developments in Clinical Tuberculosis."——At a meeting of the Vermilion County Medical Society at Danville, January 3, Dr. Edward J. Stieglitz, Chicago, spoke on "Arterial Hypertension and the Logic of Its Treatment."——Drs. Leo K. Campbell and Harry A. Oberhelman, Chicago, presented a program on diabetes before the Warren County Medical Society in Monmouth, January 19.——Dr. George A. Dicus, Streator, was reelected secretary of the North Central Illinois Medical Association for the thirtieth consecutive time at its annual meeting in Pontiac, Dec. 6, 1932. Dr. Edgar C. Cook, Mendota, was made president. The next annual session of the association will be held in Minonk.——Dr. Marion L. Klinefelter, St. Louis, addressed the Madison County Medical Society, Edwardsville, January 13, on fractures of the spine. ——A symposium on fractures was conducted before the Peoria City Medical Society, January 17, by Drs. Arthur H. Conley, William R. Cubbins and James J. Callahan, all of Chicago.

Chicago

Guests of Tuberculosis Society.—A program is being given before the Chicago Tuberculosis Society, February 11, by Drs. Frederick T. Lord, Boston, on "Pneumonia"; Francis M. Pottenger, Monrovia, Calif., "Reflex Relationship of the Lungs to Other Organs"; Henry Kennon Dunham, Cincinnati, "Emphysema a Serious Sequela of Arrested Pulmonary Tuberculosis," and Jay Arthur Myers, Minneapolis, "Some Changes in Our Conceptions of Tuberculosis." These physicians are members of the board of directors of the National Tuberculosis Association, which held its meeting in the afternoon.

Rush College Sponsors Program.—Rush Medical College, University of Chicago, will sponsor the program to be given before the Chicago Medical Society, February 15. Speakers will be Drs. Kellogg Speed on "Everyday Knee Injuries, Excluding Fracture—Diagnosis and Treatment"; Fred L. Adair, "Tuberculosis and Pregnancy"; Arthur H. Parmelee, "Diagnostic Value of Roentgenograms of the Epiphyses of Growing Bones," and Samuel W. Becker, "Sympathetic Nervous System and Skin Diseases." The society will be addressed, March 1, by Drs. Carl A. Hedblom, on "Surgical Treatment of Tuberculosis"; Raymond William McNealy, "Evaluation of the Surgical Risk," and Karl A. Meyer, "Deferred Operation in the Treatment of Periappendicular Abscess."

Symposium on Hospital Economics.—The American Conference on Hospital Service is sponsoring a symposium on hospital economics, February 14. The speakers will be Drs. Morris Fishbein, editor of THE JOURNAL, on "Hospitals and Insurance"; Herman Smith, medical superintendent, Michael Reese Hospital, "Group Payment Plans," and Rosco G. Leland, director, Bureau of Medical Economics, American Medical Association, who will lead the discussion in the form of a question box. Dr. Winford H. Smith, director, Johns Hopkins Hospital, Baltimore, will address the luncheon meeting of the Central Council for Nursing Education, February 14, on "Future Trends in Nursing." These organizations are meeting in conjunction with the Congress on Medical Education and Hospitals of the American Medical Association.

INDIANA

Bill Passed.—H. 100, proposing to accord to all hospitals treating persons injured through the fault of another, liens on all rights of action, suits, claims, judgments, settlements or compromises which may accrue to the injured persons by reason of their injuries, has passed the house.

Society News.—Dr. Paul D. Crimm, Evansville, addressed the Gibson County Medical Society in Princeton, January 9, on "Early Evidences of Tuberculosis in Children."——The La Porte County Medical Society was addressed in La Porte, Dec. 15, 1932, by Dr. Mark L. Loring, Chicago, on "The Rectosigmoid and Pathological Conditions Affecting It."——At a meeting of the Rush County Medical Society, Rushville, January 2, Dr. John C. Sexton, Rushville, spoke on "Artificial Pneumothorax."——The Elkhart County Medical Society, Elkhart, heard Dr. Grover C. Penberthy, Detroit, discuss osteomyelitis, January 5.

Bills Introduced.—H. 148 proposes a chiropractic practice act, under which chiropractors are to be examined and licensed by an independent board of chiropractic examiners. Chiropractic is defined as "the science of locating and correcting any interference with nerve surgery." H. 185 proposes to require hospitals supported in whole or in part by contributions or other public funds of the state or any municipal corporation, incorporated hospitals offering treatment to patients free of charge, and incorporated hospitals conducted as public charities to keep records of the treatment and medical history of their patients. Such records are to be admissible as evidence in the courts but only so far as they relate to treatment and medical history.

IOWA

Bills Introduced.—S. 142 proposes to repeal the law accepting on behalf of the state the provisions of the federal Sheppard-Towner Maternity and Infancy Act. S. 137 proposes that the local board of health to whom a physician has reported that a patient is infected with a quarantinable disease shall report that fact immediately to the post office where the quarantined patient receives or dispatches mail. H. 129 proposes that a physician, in addition to reporting to the local board of health that a patient is infected with a quarantinable disease, report that fact immediately to the post office where the quarantined patient receives or dispatches mail.

Health Lectures for Students.—The Speakers' Bureau of the Iowa State Medical Society made its first contact with college students when it opened a series of lectures at Drake University, Des Moines, Dec. 8, 1932, with Dr. Walter L. Bierring speaking on "Romances in Medicine." The university has set aside ten chapel periods, two series of five periods each, for health talks by members of the state society. Dr. Channing G. Smith, Granger, spoke, December 15, on "Simple Rules of Health"; Dr. Edward M. Myers, Boone, December 22, "Cancer," and Dr. Milford E. Barnes, Iowa City, discussed "Insurance Which Actually Insures," January 5. Dr. Albert A. Schultz, Fort Dodge, discussed "Periodic Health Examinations," January 19.

KANSAS

Bill Introduced.—S. 174 proposes to make it a misdemeanor for the authorities of any hospital, supported in whole or in part by public contributions or donations, to refuse any physician, licensed by the state board of medical registration and examination, the right to practice within the confines of the hospital.

Appointments to Medical Board.—According to the *Journal of the Kansas Medical Society*, the following appointments to the state board of medical registration and examination were recently made: Dr. Henry E. Haskins, Kingman, to succeed Dr. Henry Z. Hissem, Ellsworth; Dr. Edgar C. Duncan, Fredonia, succeeding the late Dr. Paul S. Mitchell, Iola, and Dr. John D. Pace, Parsons, succeeding Dr. George R. Dean, McPherson.

KENTUCKY

Society News.—Drs. Gordon F. McKim, Cincinnati, and Robert W. Bledsoe, Covington, addressed the annual meeting of the Licking Valley Medical Society in Newport, Dec. 8, 1932, on problems in urology and influenza and complications, respectively.——Drs. Otis Warr, Memphis, Tenn., and Earl C. Walter, Mayfield, addressed the quarterly meeting of the Four-County Medical Society, recently, in Mayfield, on "Disturbances of the Gallbladder and Liver" and "Beef Bone Splints in the Treatment of Fractures," respectively.——Dr. Owsley Grant addressed the Jefferson County Medical Society, Louisville, January 9, on "Removal of the Prostate Through the Urethra." Dr. Luther C. Peter, Philadelphia, was the speaker for January 23, on "Recent Advances in Squint."——Dr. William S. Snyder, Jr., Frankfort, addressed the Franklin County Medical Society, Frankfort, Dec. 1, 1932, on headaches. ——Drs. Walter G. Pennington, London, and James Harry Hendren, Pineville, were elected president and secretary, respectively, of the Cumberland Valley Medical Association at the recent annual meeting in Harlan. Among speakers were Drs. Emmet F. Horine, Louisville, and Caswell C. Turner, Glasgow, on treatment of congestive heart failure and the value of x-rays in diagnosis of tuberculosis, respectively. This society comprises physicians of Harlan, Knox, Bell, Laurel and Whitley counties.

MAINE

Bill Introduced.—H. 217, to amend the law prohibiting the practice of vivisection in schools supported wholly or in part by public money, proposes to make a violation of the act punishable by a fine of from $10 to $25 and to strike out the provision in the present law making it mandatory for the commissioner of education to revoke the certificate of any teacher violating the act.

MARYLAND

Bill Introduced.—H. 79, to amend the workmen's compensation act, proposes, in effect, to permit an employee to select his own physician and to make the employer liable for the value of services of the physician.

Clinics at University of Maryland.—Dr. Dean Lewis held a surgical clinic, January 12, at the University of Maryland, the first of another series of Thursday afternoon clinics sponsored by the division of medical extension. Clinics on pediatrics and allergic manifestations were conducted, January 19 and 26, by Drs. Albert Graeme Mitchell, Cincinnati, and Robert A. Cooke, New York, respectively, and on intracranial injuries to the fetus, February 2, by Dr. Fred L. Adair, Chicago. Dr. Charles R. Austrian, Baltimore, directed a medical clinic, February 9. Subsequent clinics will be conducted by the following physicians:

Rolla E. Dyer, Washington, D. C., February 16, Typhus and Spotted Fever.
Henry R. Geyelin, New York, February 23, Treatment of Diabetes.

MASSACHUSETTS

Bill Introduced.—H. 749 proposes that in all proceedings for the discharge of a person from an institution for the insane he shall have the right to be examined, at his own expense, by a physician of his own choice and to have that physician testify in his behalf.

Society News.—The Massachusetts Psychiatric Society was addressed, Dec. 21, 1932, by Dr. Jacob Kasanin, Howard, R. I., and Zitha A. Rosen, research worker, Boston, on "A Study of Clinical Variables in So-Called Schizoid Personalities," and Allan Winter Rowe, Ph.D., Boston, "Possible Constitutional Factors in Behavior Problems."——Dr. John D. Camp, Rochester, Minn., addressed the New England Roentgen Ray Society in Boston, Dec. 16, 1932, on "Roentgenologic Diagnosis in Diseases of the Spinal Cord and Associated Structures."——Dr. Elliott C. Cutler addressed a joint meeting of the Greater Boston Medical Society and the Beth Israel Hospital, January 3, on "Postoperative Pulmonary Abscess: Experimental and Clinical Studies."

Health at New Bedford.—Telegraphic reports to the U. S. Department of Commerce from eighty-five cities with a population of 37 million, for the week ended January 28, indicate that the highest mortality rate (21.8) appeared for New Bedford and for the group of cities as a whole, 12.4. The mortality rate for New Bedford for the corresponding week in 1932 was 10.2 and for the group of cities, 11.5. The annual rate for the eighty-five cities for the four weeks of 1933 was 13.1, as against a rate of 12 for the corresponding period of the previous year. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The facts that some cities are hospital centers for a large area or that they have large Negro populations may tend to increase the death rate.

Course on Heart Disease.—The New England Heart Association opened a clinical course on heart disease, Dec. 7, 1932. The speakers included Drs. Samuel A. Levine, Edward D. Churchill, Charles F. Branch and Roger I. Lee. Tentative programs for subsequent meetings were announced as follows:

February 8, Peripheral Vascular Disease Exclusive of Raynaud's Disease, Drs. Soma Weiss, Arthur W. Allen, Tracy B. Mallory, James C. White and Reginald H. Smithwick.
April 5, Pulmonary Vascular Disease, Drs. Hugo Roesler, Philadelphia; Oscar Brenner, Brooklyn; Howard B. Sprague and Paul D. White.

Four lectures will be given, May 22-31, by Dr. Ronald T. Grant of the clinical research department, University College Hospital Medical School, London, on "Endocarditis and Coronary Disease."

MICHIGAN

Bill Introduced.—H. 170 proposes a new dental practice act.

No Smallpox in Detroit.—Not a case of smallpox was reported in Detroit in 1932, establishing a new record, states the city health department. No case of the disease has been reported since August, 1931. The lowest death rate on record (8.6 per thousand) was reached in 1932, according to provisional statistics, and a new low rate for infant mortality, 51.5 per thousand. The birth rate continues to decline, the department reported, the rate in 1932 being 17.1 per thousand as compared with 18.6 in 1931 and 27.1 in 1920.

Rare Books Given to University.—Books, microscopic apparatus and slides are included in a shipment recently received by the University of Michigan from the estate of the late Mrs. Louise Reed Stowell, an alumna. The collection is said to include works of Malpighi, dated 1668, and a microscope believed to be more than 100 years old. Mrs. Stowell received the degree of master of science from the university in 1877, and for the next twelve years was assistant in microscopic botany. She was the widow of Dr. Charles Henry Stowell, who graduated from the University of Michigan Medical School in 1872 and who later became professor of histology and microscopy there.

Dr. Cannon Gives Beaumont Lectures.—Dr. Walter B. Cannon, George Higginson professor of physiology, Harvard University Medical School, Boston, delivered the three Beaumont Lectures of the Wayne County Medical Society, Detroit, January 30-31. His subjects were "The Newer Views of Hunger and Thirst in Relation to Beaumont's Concepts," "Interrelations of the Digestive Process and Health, and How One May Affect the Other in Either Direction," and "Effects of Pain and Emotional Excitement on Digestive Function, and the Place of Digestive Disturbances in the General Body Reactions Under These Conditions." The program of the society this year is a commemoration of the one hundredth anniversary of the publication of Beaumont's work on digestion. In addition to the lectures, the society presented an exhibit including photostat copies of original manuscripts by Beaumont, original books and records, copies of "Experiments and Observations on the Gastric Juice," and valuable papers and a painting of Beaumont.

MISSOURI

Bill Introduced.—S. 125 proposes that (1) all examinations required by law as a condition precedent to the right to practice any profession shall be in writing and all examination papers shall be kept on file in the office of the proper board, subject to public inspection, for at least one year; (2) a rejected applicant shall have the right to appeal to the courts and in that proceeding the board shall submit a certified copy of the applicant's examination papers; and (3) three examiners each for dentistry, chiropody, osteopathy, chiropractic, nursing, optometry, and pharmacy, be appointed by the board vested by law with the authority to license, the finding of the examiners to be conclusive on the board.

Society News.—Dr. Donald R. Black discussed jaundice before the Jackson County Medical Society in Kansas City, January 17, and Dr. Wilson A. Myers spoke on "Diaphragmatic Hernia, with Especial Reference to Esophageal Hiatus Hernias." Dr. Laurence S. Nelson, Salina, Kan., addressed the society, January 10, on "A Method of Closed Prostatectomy." He also conducted a clinic before the Kansas City Southwest Clinical Society in the afternoon on the overdistended bladder. ——Dr. Joseph Hoy Sanford was elected president of the St. Louis Urological Society, Dec. 16, 1932.——At a joint meeting of the St. Louis Pediatric Society and the Society of Orthodontists, January 20, Dr. Julian D. Boyd, Iowa City, spoke on "Dietary versus Developmental Factors in Relation to Dental Disease," and Harvey C. Pollock, D.D.S., "Orthodontia as Related to Pediatrics."

MONTANA

Bill Introduced.—S. 83 proposes, in effect, to permit osteopaths and chiropractors to practice in hospitals exempt from taxation, of purely public charity, and not conducted for private or corporate profit.

NEBRASKA

Bill Introduced.—S. 126, to amend the medical practice act, proposes (1) that any licentiate who by failure to register annually allows his license to lapse may be reinstated on the recommendation of the medical examining board and on payment of the annual renewal fees he owes (apparently under the present law a license that has lapsed for this cause can be restored only if application is made within three years of the default) and (2) that an applicant for a license by reciprocity may, in lieu of the evidence of actual practice now required, show that he has served an internship of one year in an accredited hospital.

NEW MEXICO

Bills Introduced.—S. 16 proposes that "a person duly authorized to practice physic or surgery, or a professional or registered nurse, cannot be examined (in court) without the consent of his patient as to any communication made by his patient with reference to any physical or supposed physical disease or any knowledge obtained by personal examination of such patient." S. 23 proposes a new pharmacy practice act. Apparently, licensed physicians may administer and dispense drugs only in emergencies to supply the immediate needs of their patients.

NEW YORK

Mr. Bausch Honored.—Edward Bausch, president of the Bausch and Lomb Optical Company, Rochester, was the guest of honor at the annual dinner of the Society of the Genesee at the Hotel Commodore in New York, January 23. Mr. Bausch, who is 79 years old, has spent his life in the business of designing microscopes and other optical instruments. The Society of the Genesee is an organization of men and women who have lived in the Genesee Valley of New York and who meet each year to honor a prominent neighbor and renew friendships. Among the speakers were Major Gen. James G. Harbord, New York; Arthur Louis Day, Sc.D., of the Carnegie Institute, Washington, D. C.; Rush Rhees, D.D., president, University of Rochester; Louis Wiley of the New York *Times*, and John D. Rockefeller, Jr.

Bills Introduced.—S. 426 and A. 638, to amend the pharmacy practice act, proposes (1) that a drug be deemed misbranded within the meaning of the act if the package in which it is contained does not state the percentage contained therein of barbituric acid and (2) that the manufacture and sale of proprietary medicines be exempt from the operation of the act if such medicines contain no poisonous, deleterious or habit-forming drugs. S. 456, to amend the workmen's compensation act, proposes, in effect, to make compensable "any and all disabling diseases and disabling illnesses" contracted in the course of any employment covered by the act. A. 395 proposes to repeal the law regulating the possession and distribution of narcotic drugs and to enact the Uniform Narcotic Drug Act. A. 706 proposes that no hospital, supported wholly or in part at public expense, shall hereafter charge any fee or other compensation for medical services rendered while operating a clinic to which the public is invited.

New York City

Hospital News.—The New York Ophthalmic Hospital has recently merged with the New York Homeopathic Medical College and Flower Hospital. Under the new arrangement eye, ear, nose and throat patients of the hospital will be cared for by the ophthalmic hospital staff and a clinic for outpatient service will be maintained in a newly equipped building in the Flower Hospital group at 415 East Sixty-Third Street.

Society News.—Dr. Margaret S. W. Barnard, among others, addressed the Medical Association of the Greater City of New York, Dec. 19, 1932, on "Paper Films in Chest Radiography."——Dr. George E. Pfahler, Philadelphia, addressed the New York Roentgen Society, December 19, on "Mediastinal Tumors and Their Differentiation."——Dr. Sheldon A. Jacobson, among others, addressed the New York Pathological Society, December 22, on "Myeloid Leukemia with Osteosclerosis."——Dr. William P. Healy addressed the Medical Society of the County of Queens, Forest Hills, December 16, on "Carcinoma of the Female Organs."——A society to be known as the Association of Private Hospitals of Greater New York was recently formed by representatives of seventeen hospitals, with Dr. Harold M. Hays as president and Dr. George E. Browning, Jr., secretary. Mr. O. R. Gottfried is executive director of the organization, which has headquarters at 256 Fifth Avenue.—— Speakers at a meeting of the New York Neurological Society in conjunction with the section of neurology and psychiatry of the New York Academy of Medicine, January 10, were Drs. James H. Huddleson, Jr., on "Circulatory Disorders in Psychoneurotics in Terms of the Schneider Index"; Howard W. Potter, "A Clinical Concept of Mental Deficiency," and George K. Pratt, "Mental Hygiene—A Developing Concept."——Dr. Isaac Starr, Jr., Philadelphia, among others, addressed the New York Physical Therapy Society, January 4, on "Use of Heat and Other Agents in the Local Treatment of Peripheral Vascular Disease."——Dr. Chevalier Jackson, Philadelphia, addressed a meeting of physicians held under the auspices of the New York chapter of the Pan-American Medical Association, January 9, on "Postoperative Pulmonary Complications."—— Dr. James Morley Hitzrot addressed the New York Surgical Society, January 11, on "Surgical Conditions of the Subdeltoid Bursa."——The Maternity Center Association held its fifteenth annual meeting, January 18, with Dr. George W. Kosmak and Hon. Alfred E. Smith as the principal speakers.

NORTH CAROLINA

Bill Introduced.—S. 134 proposes to authorize the superintendent of any public hospital, sanatorium or institution, on the written request of a licensed physician and the spouse, guardian or next of kin of any drug addict, inebriate, or insane person to restrain such person in his institution for a period not exceeding twenty days.

NORTH DAKOTA

Bills Introduced.—S. 129 proposes that all applicants for licenses to practice any form of the healing art, as a condition precedent to examination by their respective "professional" boards, pass examinations in anatomy, chemistry, physiology, pathology, bacteriology, diagnosis and hygiene, to be given by a board of examiners in the basic sciences. However, the board, in its discretion, may accept applicants as competent in any or all of the basic sciences, without examination, if those applicants "have successfully passed an examination in the particular basic science, in any college or university, recognized by the Association of American Universities." H. 89 proposes to classify mariahuana as a habit-forming drug within the meaning of the narcotic drug act. S. 137 proposes to permit dentists, holding proper federal permits, to administer intoxicating liquors to patients.

OHIO

Bills Introduced.—H. 60 proposes that the provisions of the medical practice act "shall not be construed to apply to persons who only practice religious tenets of their church as an exercise or enjoyment of religious freedom, if no material medicine, manipulation or material means are prescribed or used." H. 80 proposes that the state reimburse hospitals for the care and treatment of indigent persons injured in automobile accidents.

Personal.—Dr. Aaron H. Smith, Atlanta, Ga., has been appointed superintendent of Pleasant View Sanatorium, Amherst, to succeed the late Dr. Herbert F. Gammons. Dr. Smith has been assistant superintendent of Battle Hill Sanatorium in Atlanta.——Dr. Arthur B. Lathrop, Swanton, recently completed fifty years of medical practice.——Dr. John H. Baird, clinical director of the Veterans' Administration Hospital at Chillicothe, has been transferred to the central office in Washington, D. C., as associate in the neuropsychiatric division.——Dr. Charles A. Bowers has been appointed director of surgery at St. Luke's Hospital, Cleveland, to succeed Dr. Carl H. Lenhart, who was recently appointed professor of surgery at Western Reserve University School of Medicine.

OKLAHOMA

Bill Introduced.—S. 162, to amend the workmen's compensation act, proposes to permit an injured employee to select his own physician, for whose services the employer shall be liable.

OREGON

Bills Introduced.—H. 127 proposes that all applicants for licenses to practice medicine, osteopathy, chiropractic, naturopathy, or any other system of the healing art, as a condition precedent to examination by their respective "professional" boards, be examined in anatomy, physiology, pathology, chemistry and hygiene by a state board of higher education. H. 244, to amend the workmen's compensation act, proposes that unless the employer has contracted for medical or hospital care for his employees, an injured employee may choose his own physician. H. 257 proposes to authorize the governing body of any incorporated city to license, for the purpose of regulation and revenue, all such professions and other employments as the public good requires to be licensed and regulated. H. 235, in effect, proposes to create a department of public health and sanitation, the director of which shall be a licensed physician. He shall act as secretary, treasurer and executive officer of the state boards of health, of eugenics, of medical examiners, of dental examiners, of naturopathic examiners, of chiropractic examiners, of chiropody examiners and of other vocational examining boards.

PENNSYLVANIA

Society News.—Dr. Charles Falkowsky, Jr., Scranton, addressed the Schuylkill County Medical Society at Pottsville in December, on "Modern Medicine."——Dr. John Cooke Hirst II, Philadelphia, discussed modern methods in obstetrics before the Lehigh County Medical Society, Allentown, Dec. 13, 1932.——Dr. John Lovett Morse, Boston, was the guest speaker before the Allegheny County Medical Society, Pittsburgh, January 17, on "The Value of Breast Milk and Infant Feeding."——Dr. Conrad Berens, New York, addressed the Luzerne County Medical Society, Wilkes-Barre, Dec. 7, 1932, on "The Eye in the Diagnosis and Treatment of General Diseases."—— Dr. Thomas Palmer Tredway, Erie, addressed the Erie County Medical Society, January 3, on cardiac arrhythmias.

Bills Introduced.—S. 270 proposes to accord to the state and to every charitable institution rendering hospital care to

a person injured through the fault of another, a lien for the amount of the hospital charges on all rights of action, suits, claims, or demands which may accrue to such injured person as the result of his injuries. This lien, however, may not exceed 50 per cent of the award, verdict, settlement, or compromise received by the injured person. S. 257 proposes to make it the duty of state aided hospitals with available facilities, to treat every indigent sick veteran who is eligible for federal hospitalization and presents a certificate from a physician showing that the veteran has applied for federal hospitalization and that an emergency exists. The hospital must then care for the veteran until such time as a bed is available in a federal institution. The hospital is to be compensated as in the case of other indigent patients.

Philadelphia

Two Hospitals Drop Group Payment Plans.—Two Philadelphia hospitals have recently abandoned plans for hospitalization on a group payment basis as a result of protests by the Philadelphia County Medical Society. Hahnemann Hospital, which had enrolled 500 subscribers for a fee of $10 a year, announced, January 13, that no more applications would be received. Its plan had been in operation since November. Germantown Hospital had under consideration a plan for hospitalization of the employees of a Philadelphia industrial firm at $15 a year. It had been approved by the trustees of the hospital, but the final decision was left to the staff, which decided against adoption at a special meeting, January 16. The county society issued a statement the following day in which it declared its unalterable opposition to "any form of group or contract practice which militates against the conservation of public health or which tends to exploit and commercialize medical care at the expense of the public." The alternative to group or contract practice, the statement continued, is, as it has always been, the family physician. "Unwarranted propaganda against the efficiency of this form of private practice has unquestionably been put forth in an effort to commercialize medical care and has been taken advantage of by that class of people who are constantly trying to evade payment for any benefits received, the same class that moves from house to house and shops from store to store, always seeking something for nothing. The medical profession will continue to do its duty in protecting the public from such exploitation, even at the expense of being considered selfish by thoughtless people who have no direct knowledge of medical problems," the statement concluded.

SOUTH DAKOTA

Typhoid Epidemic at Chamberlain.—An epidemic of typhoid in which 230 cases occurred between December 29 and January 19 has been reported from Chamberlain, a town of about 1,400 inhabitants. December 29, a case of typhoid was reported to the state board of health and the state sanitary engineer was asked to come to Chamberlain to investigate the city water supply. Investigation disclosed that insufficient chlorine was being used to purify the water, which is derived from the Missouri River. The state board of health set up a temporary laboratory for diagnostic tests and water analysis. By January 7 the number of cases had increased to 175. After investigation, the Red Cross took over the nursing situation, and an emergency hospital of forty-six beds was set up in the basement of the city hall. Field nurses were also provided by the Red Cross for patients in their homes. Although the water supply was definitely incriminated as the source of the epidemic, every possible source of infection was checked. Pasteurization of all milk sold in the city was ordered and sanitary crews were set to clean up rubbish in the town. The water plant was remodeled. Vaccination was begun on a large scale, January 3, and within three days more than 2,000 persons of the town and surrounding territory had received the first inoculation. Officials of the state board stated, January 19, that the epidemic was believed to be under control, as fewer cases were being diagnosed daily. Complete cooperation on the part of physicians, business men and city, school and county officials was reported by those in charge of the emergency. Newspapers reported, January 26, that twenty persons had died in the epidemic.

TEXAS

Bill Introduced.—H. 179 proposes to accord to hospitals or clinics rendering hospital services, caring for persons injured through the fault or neglect of another, liens limited to $5 for each day of treatment on any rights of action, recoveries or settlements accruing to the injured persons by reason of their injuries. This lien, however, is not to attach to claims or recoveries had under the employers' liability act.

Society News.—Dr. Ollie S. Hodges, Beaumont, was elected president of the Texas Ophthalmological and Otolaryngological Society at the annual meeting in Fort Worth, Dec. 3, 1932. ——Drs. Joseph R. Frobese, San Antonio, and Ben R. Eppright, Austin, addressed the Lee County Medical Society, Giddings, Dec. 6, 1932, on resection of the prostate and lesions of the mouth, respectively.——Drs. Ben B. Brandon, Edgewood, and Horace A. Baker, Wills Point, addressed the Van Zandt County Medical Society, Canton, Dec. 2, 1932, on fractures and on anesthesia in obstetrics, respectively.——The Texas Conference on Child Health and Protection was held in Austin, February 9-11. Chairmen of the sections are Dr. John O. McReynolds, Dallas, medical service; Warner E. Gettys, Ph.D., Austin, the handicapped child; Dr. Herbert N. Barnett, public health service and administration, and Benjamin F. Pittenger, Ph.D., Austin, education and training.

UTAH

Bill Introduced.—H. 17 proposes to accord to physicians, nurses and hospitals, caring for persons injured through the fault of another, liens or any claims or causes of action, which the injured persons may have against the persons causing the injury, or which the person causing the injury may have against any insurance or surety company, because of the injuries.

WASHINGTON

Bills Introduced.—H. 158 proposes that an action based on malpractice shall be brought within two years after the occurrence of the cause of action. H. 118, to amend the chiropody practice act, proposes to define chiropody as "the examination, diagnosis or treatment, medically, mechanically or surgically, of the ailments of the human foot, and massage in connection therewith; but shall not include the amputation of the toes or foot, nor operation requiring the use of anesthetics other than local." The bill also proposes that the act shall not prohibit regular commercial sales of foot appliances and remedies, or shoes in retail stores. S. 95 proposes to repeal those sections of the workmen's compensation act authorizing employers to enter into contracts for the furnishing of medical and hospital services to such of their employees as may be injured in the course of their employment.

WYOMING

Bill Passed.—H. 12, proposing to authorize the sexual sterilization of insane, idiotic, imbecile, feebleminded or epileptic inmates of state institutions, has been passed by the house.

Bills Introduced.—H. 96 proposes that nothing in the pharmacy practice act is to prevent the sale by any retailer of any patent or proprietary medicines or poisons when sold in original sealed packages. H. 91 proposes to authorize the state board of medical examiners to license persons to practice chiropody. Chiropody is defined as the examination, diagnosis or treatment medically, electrically, mechanically or surgically of the ailments of the human foot, except the amputation of the toes or foot, or the use of anesthetics other than local.

GENERAL

Medical Bills in Congress.—*Changes in Status:* S. J. Res. 243 has been favorably reported to the Senate, authorizing the President of the United States to extend a welcome to the Pan-American Medical Association, which will hold its Fourth Congress at Dallas, Texas, from March 21 to March 25. H. R. 7518 has been favorably reported to the Senate, empowering the President, under such regulations as he may prescribe, to authorize the board of health of the Canal Zone to issue licenses to practice the healing art, which regulations shall include the conditions under which such licenses shall be issued and shall provide for the revocation of licenses.

Northwest Regional Conference.—The annual Northwest Regional Conference, which is to be held in St. Paul, February 19, will be devoted to discussion of medical economics. Among the subjects on the program are: care of the indigent; oversupply of physicians; "The Milwaukee Plan"; health insurance and corporation practice; financing of medical journals; various phases of legislation and relations of the American Medical Association to the state associations. Richard E. Scammon, Ph.D., dean of the medical sciences, University of Minnesota Medical School, Minneapolis, will lead a discussion

of the report of the Committee on the Costs of Medical Care. Others who will participate in the conference are Drs. Naboth O. Pearce, Minneapolis; Franklin S. Crockett, West Lafayette, Ind.; Reginald H. Jackson, Madison, Wis.; John R. Neal, Springfield, Ill.; Paul H. Burton, Fargo, N. D., and John R. Westaby, Madison, S. D., all presidents of their respective state societies. Among other speakers will be Dr. William C. Woodward, Chicago, director, Bureau of Legal Medicine and Legislation, American Medical Association, who will speak on health insurance and corporation practice. Dr. John F. D. Cook, Langford, S. D., is president of the conference and Dr. Edward A. Meyerding, St. Paul, secretary.

Mid-South Post Graduate Medical Assembly. — The forty-ninth annual session of the Mid-South Post Graduate Medical Assembly (formerly the Tri-States Medical Association of Mississippi, Arkansas and Tennessee) will be held in Memphis, Tenn., February 14-17. Among the speakers announced are the following physicians:

Joseph L. Baer, Chicago, Cervix Uteri in Obstetrics and Gynecology.
John M. Wheeler, New York, Exophthalmos as a Diagnostic Sign.
Russell L. Cecil, New York, Chronic Arthritis.
Frank H. Lahey, Boston, Modern Conception of Thyroid Disease and Its Management.
Gerald B. Webb, Colorado Springs, Colo., Principles of the Treatment of Pulmonary Tuberculosis.
Clarence M. Grigsby, Dallas, Texas, Cardiac Pain: Its Clinical and Differential Diagnosis.
Alexander Randall, Philadelphia, The Story of Renal Tuberculosis.
Charles F. Craig, New Orleans, Diagnosis and Treatment of Masked and Latent Amebic Infection.
Thomas R. Brown, Baltimore, Medical and Surgical Treatment of Disease of the Gallbladder.

The medical profession of Memphis will give a stag buffet supper in honor of the assembly at the Memphis Country Club, Wednesday evening, February 15. The Southern Inter-Urban Gynecological and Obstetrical Society and the southern section of the American Laryngological, Rhinological and Otological Society will also meet in Memphis, February 13.

Sectional Meetings of Otolaryngologists.—Four sections of the American Laryngological, Rhinological and Otological Society have recently held their midwinter meetings and the fifth, the southern section, will meet, February 13, in Memphis, Tenn. At the meeting of the eastern section in Boston, January 6, the program included the following speakers:

Drs. Harris P. Mosher and Delbert K. Judd, Boston, osteomyelitis of the frontal sinus.
Dr. George M. Coates, Philadelphia, indications for radical sinus surgery.
Dr. Varaztad H. Kazanjian, Boston, treatment of nasal deformity.

The middle section met, January 9, in Cincinnati. Among the speakers were:

Dr. Leopold B. Bernheimer, Chicago, color index of the nasal septum in connection with faulty metabolism.
Dr. Harris H. Vail, Cincinnati, schwannoma of the larynx.
Dr. Albert C. Furstenberg, Ann Arbor, Mich., pathology of spread of osteomyelitis: its relation to brain abscess.

At the midwestern sectional meeting, held in Iowa City, Iowa, January 10, the program included:

Dr. Gordon B. New, Rochester, Minn., osteitis deformans of bones of the face.
Dr. Lee Wallace Dean, St. Louis, microscopic studies of nasal and ear discharges.
Dr. Sam E. Roberts, Kansas City, Mo., lichen planus of the oral mucosa without skin manifestations.

The western section held its meeting in San Francisco, January 13-14. Among the speakers were:

Dr. Ashley W. Morse, Butte, Mont., pansinusitis with food allergy and hysterical manifestations.
Dr. Frank B. Kistner, Portland, Ore., parathyroid tetany.
Dr. Edward C. Sewall, San Francisco, cytologic examination of the sinuses.

Among those who will give addresses at the southern session will be:

Dr. Waitman F. Zinn, Baltimore, laryngectomy.
Dr. Theron E. Fuller, Texarkana, Texas, blastomycosis of the larynx.

CORRECTIONS

Osseous Changes in Hyperparathyroidism. — In the article by Dr. Camp, entitled "Osseous Changes in Hyperparathyroidism," in THE JOURNAL, Dec. 3, 1932, page 1914, the legend that appears under figure 2 should have been under figure 3, and vice versa.

Duroziez's Sign.—In Blumgart and Ernstene's article in THE JOURNAL, January 21, page 176, table 1, case A. E., the systolic blood pressure and the pulse rate are transposed and they should read: pulse rate per minute, 70; systolic arterial pressure in millimeters of mercury, 126.

Government Services

General Munson Retires

Brig. Gen. Edward L. Munson ended thirty-nine years of service in the Army Medical Corps, Dec. 31, 1932, having reached the retirement age, December 27. For two years he has been assistant to the surgeon general. He was adviser to the Philippine government in hygiene and sanitation, 1922-1924. During the World War he was assistant to the surgeon general in charge of training medical department personnel, and was later chief of the morale branch of the General Staff. In 1923, General Munson was in charge of medical relief for the U. S. Relief Mission in the earthquake area of Japan. He has taught hygiene in the service schools and preventive medicine at George Washington University School of Medicine, Washington, D. C. In addition, he has invented several articles of equipment now in use in the army and is the author of a number of books on medicomilitary subjects. He received the Distinguished Service Medal in 1919. Appointed to succeed him as assistant to the surgeon general is Brig. Gen. Albert E. Truby, commanding officer of the Army Medical Center. General Truby is a graduate of the University of Pennsylvania School of Medicine and entered the army shortly after his graduation just preceding the Spanish-American War. From 1916 to 1918 he was chief health officer of the Canal Zone and superintendent of Ancon Hospital, Panama. During the World War he was on duty in the surgeon general's office and later served in the air medical service and as superintendent of Letterman General Hospital, San Francisco.

American Scientific Mission in Haiti

Capt. William Chambers has been transferred from the division of planning, Bureau of Medicine and Surgery, U. S. Navy, Washington, D. C., to duty as director of the American Scientific Mission, Port au Prince, Haiti, succeeding Capt. Montgomery O. Stuart. Established late in 1930 as the result of an agreement between the United States government and Haiti, the mission was "to act as advisers to the Public Health Service of Haiti and control the sanitation in the cities of Port au Prince, including the suburb Petionville, and Cape Haitian, where other American troops (marines) continue to be stationed, pending other arrangements and until the conclusion of a protocol for their evacuation" (THE JOURNAL, Jan. 9, 1932, p. 153). It was in October, 1930, that Haiti assumed definitely the administration and control of its national public health service. The director and eight other naval medical officers of the Public Health Service of Haiti comprise the American Scientific Mission.

Wellcome Medal and Prize Competition

The Association of Military Surgeons again offers the Henry S. Wellcome Medal and a cash prize of $500 for the best paper on "Value of Studies in Health and Sanitation in War Planning" or "Military Medicine as a Specialty. How Can a Knowledge of it be Promoted in the Medical Profession in Civil Life and in the Reserves?" Each competitor must furnish five copies of his paper, which must be signed with a nom de plume or some distinctive device. The manuscript must be accompanied by a sealed envelop, however, containing the name and address of the writer. Papers must be in the hands of the secretary of the association, Army Medical Museum, Washington, D. C., not later than Sept. 1, 1933. The maximum length is fixed at 10,000 words and the minimum at 3,000.

New Surgeon General of Navy Appointed

Capt. Charles M. Oman has been appointed surgeon general of the U. S. Navy, succeeding Rear Admiral Charles E. Riggs, whose term expired January 19. Capt. Oman, who is 54 years old, graduated from the University of Pennsylvania Medical School in 1901 and was commissioned assistant surgeon in the medical corps of the navy, Dec. 18, 1901. He entered his present rank, Dec. 28, 1921. During the World War Captain Oman served at the naval hospital, New York; in command of the Hospital Ship *Comfort*, and in command of navy base hospital number 1, Brest, France. He was in command of the naval dispensary, navy department, from October, 1928, until September, 1931, when he was ordered to command of the naval hospital, Annapolis. Rear Admiral Riggs was appointed surgeon general with ex-officio rank of rear admiral, Jan. 19, 1929. He has been transferred to special duty with the secretary of the navy.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Jan. 14, 1933.

The Eugenic Problem

In an address to the Eugenics Society, Mr. C. J. Bond, a well known surgeon, said that while recent reports showed great improvement in the general health of the school population, they provided no proof that natural intelligence and the innate capacity of mind and body were similarly improving. In spite of all the expenditure of time, money and energy on education, national health work, and the relief of unemployment during recent years, today one in every ten of our people was too dull or sickly to earn a living unaided, one in 200 was or had been mentally afflicted, and one in 120 was feebleminded. We had left heredity and eugenics out of our calculation and had been breeding from the less well endowed, the less fit and the less worthy stocks in our population. The tendency of the birth control movement had been to reduce the numbers of children born in the more educated, skilled and successful, rather than in the less fit groups. To that extent birth control had had a dysgenic effect on our population. Much of our social legislation was not founded on sound biologic principles. Helping the weak, necessary though it was, was done at the expense of normal citizens and was actually providing for handing on the burden of human inefficiency, defect and misery in an aggravated form to future generations. If the great advance in medical knowledge was to secure the best results for humanity as a whole, the medical horizon must be extended to include also the health and welfare of future generations. A great step would be gained if the nation realized and acted on the conviction that the future of Western civilization depended ultimately on the innate capacity and the mental and bodily qualities of our people. Innate capacity is a matter of human breeding. Before a proper biologic outlook on human life could come about, public opinion in regard to biology and genetics must undergo a change.

Pensions for Panel Physicians

The British Medical Association has inaugurated a scheme for panel physicians which provides not only a pension for the physician himself but also an assured income for his dependents in the event of his death before he attains a pensionable age. Moreover, the pension will become operative in the event of his becoming disabled permanently. The scheme is contributory on a unit system. One unit represents a pension of $500 a year at the age of 65, or the physician may accept a lump sum of $5,000 in place of the pension. The scheme will be carried out by three insurance companies selected to issue the policies. The contributions will be paid quarterly by means of a form of authority from the physician authorizing the insurance committee that pays him to deduct the necessary amount from his fees. On the death of a physician before the age of 65, $250 a year will be payable to his dependents until the anniversary of the date of entry nearest the attainment of the age of 65, had he survived. In addition, there will be refunded a lump sum representing the contributions paid toward his pension, varying from 55 to 80 per cent, according to the age of entry. These benefits are for a single unit, but a physician may take more units up to a maximum of five. The cost of a unit varies according to the age of entry. At the age of 25 the annual payment per unit is $90. After this the payment rises until it becomes $500 at the entry age of 55. Another feature of the scheme is that any profits arising out of its administration will be devoted to medical charities. Physicians have pressed the inauguration of such a scheme for many years.

Management of Outpatient Departments of London Hospitals

A committee of King Edward's Hospital Fund for London, appointed to inquire into the methods of the outpatient departments of the London hospitals and their effects on the suitability of patients and the time of waiting, has issued its report. The committee finds that many of the hospitals are using their outpatient departments more and more for cases which need consultative and specialist treatment, minor cases being either dealt with in the casualty departments or referred for treatment by general practitioners. But this can be done only if the patients can obtain this treatment at a cost within their means. The committee concludes that hospitals should be encouraged to develop the consultative side of their outpatient work and the reference of nonurgent cases, after their first attendance, to suitable agencies which provide general practitioner treatment. But this is subject to three provisos: 1. Patients who desire a second opinion but cannot pay the fees of a private consultant should have access to the hospitals, at least for one medical examination, without first having to obtain the consent of any private physician. 2. A sufficient number of cases of all kinds should be available at teaching hospitals for the purposes of medical education. 3. Reference of minor cases to other agencies should not be made a rigid rule but should be introduced only gradually and applied only with gradually increasing strictness, except possibly when, as in the case of insured persons, an alternative agency has already been established, which is available without further cost to the patient. This would facilitate the treatment of the more serious cases and prevent overlapping between the hospitals and other agencies. The committee deals at some length with the question of waiting, about which much complaint has been made. The crowd of outpatients is so large that many have to wait for hours. The suggestion has been made that different patients or groups of patients should be given separate appointments, as in private practice, instead of all coming at once. This is already done for old patients in many special departments. There are difficulties in extending the system to general patients, but the committee considers that the subject needs more study before these can be pronounced insuperable.

Fenders for Omnibuses

Three persons are killed every day in London by automobiles, and a great many are injured. The street cars are fitted with fenders to prevent persons struck from being run over, but not so the thousands of omnibuses on London streets. Before the war the London General Omnibus Company appealed for suggestions for a lifeguard for omnibuses. Thousands of designs were submitted, but none of them overcame the difficulty of the front wheels projecting ahead of the vehicle, which necessitated fitting the fender so far forward that the length of the omnibus was increased beyond the regulation limit. A new double-deck omnibus has now been devised with the front wheels set back 6 feet. This has made it possible to fit for the first time a fender such as is used on street cars.

Reporting Road Accidents

A conference between the ministry of transport and various road users' organizations has resulted in a new system of reporting road accidents. The object is to provide the government with fuller information in an effort to make the roads safer. It has been found impossible, owing to lack of data, to give any definite reason for the sudden increase in the number of automobile accidents. The police have been supplied with a new form for giving particulars of any accidents causing death or injury, which will be filled at police stations from the reports of police on the scene of the accident. The details asked for include the time of accident, the state of the weather and road, the age and sex of the driver, the length of

his or her driving experience, and whether they used dimmers on the headlights. The latter question has been raised frequently in the police court. After being filled in, the forms will be forwarded to the home office, where the data will be analyzed from month to month.

C. F. Beadles Is Dead

Cecil Beadles, F.R.C.S., pathologic curator of the Royal College of Surgeons, has died at the age of 66. He was educated at University College, where he won the gold medal in histology in 1885. He attracted the notice of Mr. Shattock, pathologic curator of the museum, who appointed him his assistant in the work of recataloguing the pathologic collection. The building up of the collection of works on general pathology occupied them thirteen years. The collections of special pathology were then taken in hand, and while this work was in progress Professor Shattock died and Mr. Beadles was appointed his successor. The task was finished only last year. Sir Arthur Keith, the conservator of the museum, says of Beadles: "He proved to be a master of museum technic, having an unrivaled skill in preparing specimens so as to bring out the essential features of the disease." With Shattock "he completed for the first time a work not written in words but in illustrative specimens—a complete and systematic treatise on general pathology." But his "greatest service to medicine was the preparation of the Army Medical Collection, now housed in the Royal College of Surgeons, the most complete and most extensive representation of the wounds and diseases of the Great War. He has taken his place in the line of eminent men who have served in succession the great museum—Paget, Eve, Targett, Shattock, Doran.

PARIS

(From Our Regular Correspondent)

Dec. 28, 1932.

The Examination for Hospital Internships

The competitive examination for admission to hospital internships, in Paris, often gives rise to disturbing incidents. The examination is made very difficult, and great precautions are taken to assure its being conducted impartially and justly. Nevertheless, nearly every year, there are candidates who seek to use fraudulent methods. During the examination this year, many of the written papers were found to have certain small signs on them. An inquiry was ordered by the director of the Assistance publique and all the readers of the papers were interrogated. Among these was a young woman, aged 26, recently married, who had already been accepted as an intern. No suspicion attached to her more than to the others; but the close questioning to which she was subjected affected her so deeply that, on returning home, she killed herself. The suicide caused considerable stir in the daily press. The superior council of the Assistance publique hesitates to declare the whole competitive examination null and void, as some demand; that would work hardship on the honest candidates. Discussions on the subject have appeared in the medical journals. There is talk even of abolishing the system of selecting interns by means of competitive examination and of allowing the hospital physicians to select those of their pupils whose professional qualifications and scientific training seem to them to justify their direct appointment to internships. But the body of former interns of the hôpitaux de Paris is an exclusive organization that is proud of its title, and it will not readily acquiesce in a different mode of selection.

Increase in the Welfare Department Budget

The 1933 budget of the Assistance publique à Paris provides for a total appropriation of 658,662,517 francs, or about $26,000,000. The budget is made up of sums paid by patients, of the revenues derived from a tax on theater tickets, and of a subsidy granted by the city of Paris. The amount of this subsidy has been increasing every year. In 1925 it was 163,000,000 francs; in 1932 it had reached 345,000,000 francs ($13,800,000), a 53 per cent increase. The number of hospital beds has increased from 35,500 to 41,700, which is, however, an increase of only 14 per cent. The daily cost per patient has greatly increased owing to the new laws, including the eight-hour day for nurses, the vacation periods of the hospital personnel and the introduction of the new social insurance system. The cost of this personnel has almost doubled. The daily cost per patient ranges now around 40 francs ($1.60). The average duration of hospitalization in Paris is twenty-seven days; in London it is twenty-four days, in Brussels twenty-two days, and in New York fifteen days. If patients stay too long in the hospitals, it is not so much from their need of treatment. There is too long waiting to be operated on, because the operating rooms are inadequate; too long periods of observation, because of delays in having various tests made, and too much red tape in transferring a patient with a chronic disease to a rural hospital.

The director of the budget suggests that economies can be made by not admitting patients whose condition does not necessitate constant care. Persons to be operated on should not be admitted until the evening before the operation. Until then they should be cared for at home by the visiting nurses of the "Service social" and should be sent to a center for convalescents as soon as they can be transported. The hospital must not be allowed to become a hotel. The economic crisis has made it necessary to curtail certain ambitious projects; but, by 1939, 4,000 new hospital beds will have been created, 500 of which will be for aged persons who are able to pay a small part of the cost of their hospitalization.

Fee Splitting

For many years there has been much discussion on the payment by a surgeon of a part of his fee to the family physician, a practice introduced, it is said, fifty years ago, by Péan, without thought of any wrong. He regarded the fee of the attending physician, which was uniform in all cases, as inadequate. Péan viewed it as a method of inducing the family physician not to postpone too long a necessary operation. Dichotomy, however, tends to deteriorate into a gratuity to the physician from the surgeon, who is inclined to increase his fees in consequence.

The Union des syndicats médicaux made an effort to solve the problem by recommending the rendering of a joint bill. This aroused the displeasure of many physicians and surgeons who abhor such practices. Well known physicians have delivered addresses before medical societies condemning dichotomy. Unfortunately, the public press announced these meetings. The announcement was aggravated by the publication of the names of physicians who agreed never to resort to dichotomy. This made the situation worse, for those whose names are not on this list feel that they have been slandered.

The Economic Crisis and Cancer of the Digestive Tract

Prof. Victor Pauchet has called attention to an increase in cancer of the digestive tract coinciding with the economic crisis. He has a large practice in abdominal surgery, and he has recently reported to the Société de médecine de Paris that never before has he observed so many gastric cancers, nor more extensive and more grave cases, than during recent months. He does not share the opinion of Professor Forgue, who attributes to the intense emotions a predisposing rôle in the genesis of neoplasms, supporting that view with statistics published following the World War; but he assumes that the financial crisis has compelled many aged persons to neglect to consult their physician promptly in regard to symptoms unless these are alarming. Gastric cancer begins insidiously, and only

an early intervention can arrest its development. Such early intervention effects 30 per cent of definitive recoveries; that is to say, recoveries extending over several years. English statistics on cancer of the rectum (Lockhart-Mummery) record an immediate mortality of 4 per cent and 50 per cent of definitive recovery.

BERLIN

(From Our Regular Correspondent)

Dec. 27, 1932.

Overworking the School Children

In spite of many reforms in the public schools, hygienic principles have not been sufficiently applied to the problem of fatigue caused by intensive study or long hours. The burdening of school children is still a subject of much discussion. To be sure, the schools should not be made solely responsible, for personal and domestic conditions may be incriminated in part. However, the schools would aid in solving the question if they would base their pedagogic theories to a greater extent on physiologic considerations.

There are three factors that constantly cause complaint: home work, the long recitation periods and extracurricular activities. Frequently, the child is overtaxed beyond the point of recovery. The child's physiologic functions become impaired, and the true condition is not recognized. He is thought to have become indolent or indifferent. An overburdening of younger children may easily occur when spurred on unduly by the older members of the class. That is especially the case when children are suffering from some health disturbance that has no striking outward manifestations. Enlarged tonsils, eye defects and other abnormalities that might be easily remedied if recognized may pass unobserved. Loss of interest in studies and frequent headaches may appear, yet the child may dissipate his energies in trying to keep up with the class. If these manifestations are associated with puberty, the unfavorable effects are enhanced. Then, too, there are children with subnormal intelligence who become more quickly exhausted by their futile efforts. These factors become much worse if, because of overlarge classes, the individual does not receive sufficient attention.

To counteract the injuries to health resulting from overburdening, pediatricians have recommended to the school authorities the omission of all school work on certain afternoons, more frequent holidays, dispensing with assignments over the week end, restriction of home work, reduction in the number of separate subjects studied, diminution in the number of school hours, and suggestions as to the maximum time to be spent on home work. Special attention should be given to the beginning classes to see that they are not overburdened. School work must not begin so early that time for sleep is shortened, and, if there is an afternoon session, it must be preceded by a really adequate rest period.

Restriction of Number of Students Admitted to University Institutes

Frequent mention has been made in previous letters of the difficulties that the present economic situation has imposed on university instruction. There is no doubt that the large number of students seeking admission to universities is due in part to the fact that no employment beckons them elsewhere. By attending the university, they postpone the day when they may be compelled to join the crowd of unemployed, although it is true that they gain some cultural values. How oppressive the overcrowding of the university has become may be seen from a recent decree of the Prussian ministry of public instruction, addressed to the faculties of the Prussian universities, which permits, as an experiment, the restriction of the number of students admitted to the university institutes, in the hope of thus preventing the overcrowding of the universities.

The ministry emphasizes that the training of students must not suffer any impairment. The federal finances do not permit any extensive increase of facilities for instruction in keeping with the onrush of students. The ministry has granted permission, therefore, to the various clinics, institutes, and the like, to announce the maximum number of students that, in their opinion, can receive proper training and to reject the applications of students in excess of that number. In the dental institutes, such restrictions were introduced some time ago.

Natural and Artificial Illumination

During a session of the Berlin Society for Public Health Culture, held in the Hygienic Institute of the University of Berlin, Prof. Dr. Schütz spoke on the essentials of natural and of artificial illumination. He discussed the essentials of artificial illumination that have been established by different peoples (Germans, Americans, British and Russians). These criteria are especially important in the schoolroom. The minimal technical requirements are 80 light units for close work such as drawing and 50 light units for coarse work. In certain countries the requirements differ from these values. In any event, demands of technic sometimes receive more consideration than the requirements of health. For natural illumination the values are different than for artificial illumination. These are not merely theoretical considerations, for these determinations are of great practical significance, since they involve the question of providing the most favorable working conditions under artificial and under natural illumination, in order that the eyes of school children may be conserved.

Meeting of Health Section of the League of Nations

The health section of the League of Nations held recently in Berlin a conference to establish uniform methods for the determination of the state of nutrition of a given population. The representatives at the conference were: for Belgium, Dr. Gilbert, as representative of the International Labor Bureau; for Denmark, Dr. Madsen; for Germany, Dr. Hamel, president of the federal bureau of health, together with Professors Martineck, von Bergmann, Atzler, Hermann Zondek, Dr. Bansi and Dr. Stephani; for France, Dr. Parisot; for Great Britain, Janet Campbell and Dr. Hurst; for the Netherlands, Professor Gorter, chairman; for Italy, Professors Gini and Baglioni; for Austria, Professor Nobel; for the United States, Dr. Merlin and Dr. Blackfan.

The conference established the details of social and medical research for the determination of undernutrition. The collection of statistical data will be accomplished by the health services of the various countries. The health section of the League of Nations will undertake the elaboration of the statistics in common with the International Labor Bureau.

The Jubilee of Friedrich von Müller

Prof. Friedrich von Müller, the eminent clinician of Munich, celebrated, Dec. 30, 1932, the golden jubilee of his medical doctorate. This splendid orator and skilful organizer, who has now attained the age of 74, is still untiringly active and is regarded as one of the outstanding characters of the German intellectual world. His reputation as a physician and investigator, and his activity at the head of the Deutsche Akademie in Munich and in the Deutsche Forschungsgemeinschaft have made him a preeminent authority. When the question is raised as to who would be a worthy representative of German science, the name of Friedrich von Müller is often the first one mentioned. Whenever he speaks, his words receive careful attention. His presidential addresses and his accounts of foreign travels awaken deep interest owing to their high intellectual content and the keen insight into cultural demands. During the past thirty years, he has been the director of the second Medizinische Universitätsklinik in Munich, and the city of Munich has rewarded him for his eminent service by conferring on him the title of "honorary citizen."

The German Red Cross

In the annual report of the German Red Cross Society for the year ended March 31, 1932, may be found the following data: In the hospitals there are about 7,000 nurses, 1,100 of these being in Red Cross institutions, 4,900 in communal institutions, 706 in university clinics and infirmaries, 211 in hospitals of brotherhoods, 86 in private clinics, 197 in maternity and after-care homes, 243 in homes for infants, and 569 in public welfare institutions. The total number of Red Cross nurses is 9,794, who are attached to fifty-seven chapters. The three-year training period (one year more than the government requires) is regarded as much needed and has been introduced by all the chapter houses. In addition to the continuation courses given in the chapter houses, the Red Cross Werner School in Berlin has become an active and important training center. During the year there has been a pronounced increase in the sanitary crews, the nursing bodies and the Good Samaritan clubs of the Red Cross, which number 3,358, as compared with 3,156 last year, with a membership of about 132,000, as against 122,000 last year, and with an auxiliary membership of 136,000. There are 6,435 municipal emergency crews, first-aid stations, and the like, and 23,505 stations for the reporting of accidents, and depositories of equipment for the transportation of the sick and injured. The service includes 565 motor ambulances for patients and 203 horse-drawn ambulances. In addition, there are more than 28,000 centers with equipment for the transportation of patients. These organizations supplied first aid to 2,300,000 persons in Germany, during the year covered by the report. In considering this total, it should, however, be borne in mind that only a portion of the hospital work and the nursing work is done by the Red Cross. There are now in Germany numerous other organizations that train nurses and practical nurses, some of which are under the auspices of religious societies, while others have been established either by the central government or by other political subdivisions.

THE NETHERLANDS

(From Our Regular Correspondent)

Dec. 3, 1932.

International Conference on Tuberculosis

The eighth conference of the Union internationale contre la tuberculose, held at The Hague and at Amsterdam, Sept. 6-9, 1932, was attended by 750 members representing thirty-three nations. At the opening session, at The Hague, in the Hall of the Knights, in the presence of the queen mother and the prince consort, Professor Nolen, president of the conference, and Mr. Ruys de Beerenbrouck, minister of the interior, welcomed the members on the occasions of the tricentennial of Leeuwenhoeck and the fiftieth anniversary of Robert Koch. The general assembly of the members of the "union" decided to hold the ninth International Conference on Tuberculosis at Warsaw, in 1934.

RELATIONS BETWEEN ALLERGY AND IMMUNITY

Mr. Jules Bordet confined his discussion to observations of an experimental nature. One understands by "allergy" a modified reaction of the organism, manifested by a hypersensitivity to a given substance after the primary infection, whereas by "immunity" one understands an insusceptibility to the disease. The speaker surveyed the great problem of allergy and immunity, concluding that, in the present state of knowledge, allergy appears to be a useful factor whose exact value cannot as yet be measured. Allergy does not constitute immunity, but it is an aid.

Immunity to tuberculosis is different from immunity to other diseases. It is possible that there is no such thing as immunity to tuberculosis. When it becomes possible better to understand the symptoms of modified cellular reactions that are produced by the chemical elements of bacilli that have developed in a constant milieu, there will be an opportunity to enlarge the conceptions of immunity and possibly also of recovery.

POSTSANATORIAL AID

Mr. B. H. Vos presented an interesting paper on the subject of postsanatorial aid. The patients who now request postsanatorial aid are a different type from those of 1922, and the change is due to modern methods of treatment by collapse therapy. These methods have made it simpler for sanatorium patients to recover their working capacity, which usually becomes much impaired by a long stay in a sanatorium. The treatment of cavities by collapse therapy requires a long time, but usually not more than from 15 to 20 per cent of patients need aid after leaving the sanatorium. Occupational therapy, which is closely associated with postsanatorial aid, has been employed in the Netherlands since 1905. Postsanatorial aid consists of work to be performed under special protection. If this aid is likely to be required permanently, it appears practical for the authorities to grant a fixed sick benefit either to the institution that has charge of the patient or to the patient himself, if he has a family dependent on him. The help of the dispensaries in supplying this aid is a necessity.

Postsanatorial aid may be given either in work colonies or in workshops connected with sanatoriums. In the Netherlands, workshops attached to sanatoriums have been organized, an arrangement that appears good, although it can hardly be regarded as final. The supervision of a work colony should be in the hands of a physician who has specialized in tuberculosis. In the choice of occupation the phthisiologist needs to consult also the industrial leader.

Mr. Pattison (United States) emphasized the differences between the American view of the problem and that of the Netherlands. Thomas Te Nuyl considered that the economic question is the most important. Placement bureaus procure for the patients suitable work. In the Netherlands there is a tendency to believe that placement bureaus should be centralized and should deal not merely with the tuberculous but also with other persons whose working capacity has become reduced by disease.

PRAGUE

(From Our Regular Correspondent)

Dec. 27, 1932.

Legal Control of Venereal Disease

The Czechoslovakian law against venereal diseases has now been in existence for ten years. It was one of the first sanitary measures put into effect in the new republic after the World War. The law introduced compulsory treatment of venereal diseases with free treatment for those who cannot afford a private physician. Besides, the law made it a duty of the physician to notify the health authorities of a patient with venereal disease who has interrupted his treatment before being cured. A measure that was novel in central Europe was the abolition of police measures against prostitution. After ten years of the law, there is no chance of reverting to old conditions. It must be stated that the control of private patients suffering from venereal diseases is inadequate in spite of the law, because most private physicians do not report patients when treatment is interrupted because of fear of losing the confidence of the public. Nevertheless, this measure was quite useful. The public institutions adhere strictly to the provisions of the law. This applies to outpatient departments of hospitals, and especially to sickness insurance clinics. Follow-up bureaus have been established which supervise the treatment of those who have ever appeared on the list of venereal patients up to the time when they are declared cured by the physician. The same thing applies to the army. Favorable results are also reported with regard to the law which deals with the

sources of infection. The physician is required to question his patients and to notify the health authorities when there is an untreated source of infection. The provisions regarding prostitution have been the chief point of controversy in discussions that have taken place since the introduction of the law. The police resented the abolition of their power. The dissolution of brothels was also carried out with reluctance in some parts of the country. In spite of that, the health authorities are developing a technic which is purely medical and which takes over the public health control of those who indulge. Nevertheless, prostitution in large cities has assumed another form against which the health authorities are powerless at present. The practice of massage is not regulated under the laws and no one has the legal right to enter premises where massage is practiced and exercise any control. Prostitutes find there a refuge, and the former clientele of brothels was carried over into these establishments. As this situation became a menace to public health, a law regulating the practice of massage is being prepared. If it is enacted, massage can be practiced only by a licensed person under the strict control of health authorities. On the whole, the law regarding venereal diseases has gained so much ground in Czechoslovakia that it is considered an important part of the public health machinery. Its position was enormously strengthened also when four years later a law was adopted in Germany similar to that in Czechoslovakia.

Dentistry in Czechoslovakia

The practice of dentistry is again under discussion. According to the present laws, dentistry may be practiced by any registered physician. Only when he wants to use the title of specialist in dentistry does he have to have special qualifications, granted after one year's postgraduate training in the State Institute for Dentistry. According to the law of 1920, which regulates the practice of dentistry, nonmedical dentists are admitted to practice only when they were licensed before 1922. Although their functions have been limited by the law (surgical procedures of any kind are prohibited to them), they may nevertheless have their own surgery. The nonmedical dentists are not graduates of any school and have acquired their craftsmanship as apprentices. The intention of the law was to place the practice of dentistry in the hands of medical dentists and let die out those who do not possess this qualification. In spite of the law, apprentices have been taken into the services of nonmedical dentists. Consequently, pressure was brought on political parties by those concerned to modify the law of 1920 to admit to the practice of dentistry those who have learned dentistry through apprenticeships. The medical profession opposes this measure, pointing out that operations of any sort, including the extraction of teeth, should not be performed by nonmedical dentists. A weakness of the defense is that some physicians often allow nonmedical dentists to perform operations on their patients that are against the law. It is evident that there are two solutions to the problem. Either dental work should be entrusted to physicians alone or special schools for nonmedical dentists should be formed where they would acquire the necessary qualification. It is doubtful whether this solution can be put through against the opposition of the medical profession of the country.

Sickness Insurance Has Financial Difficulties

The economic situation of the country begins to reflect itself in medical practice, especially among medical practitioners working under the insurance system. The sickness insurance bodies find themselves in a very unfavorable financial situation. During the last two years they have been working with a constant deficit and using their reserve accumulated in years of prosperity. There are several reasons for this unfavorable economic balance, one being that the invalid and old age insurance which went into effect in 1924 did not establish its own agencies and is using the local sickness insurance bodies for the collection of the fees. This is a burden on the sickness insurance bodies, although they are reimbursed from the Central Invalidity and Old Age Insurance Fund. The sickness insurance bodies claim that the reimbusement is far insufficient and that they have to pay most of the expenses from their own funds; another reason is that there has taken place a general reduction of wages, as the result of which the sickness insurance fees have also been cut. Unemployment is exercising strong pressure on health insurance. Many of those who had some chronic disease continued to work in times of prosperity but lost their job under the present circumstances when work is scarce. Naturally they turned to sickness insurance with their chronic disease. Recently the sickness insurance bodies addressed to the medical organization an appeal in which they ask the physicians to assent to a partial reduction of their remuneration owing to the difficult situation of the insurance bodies. The physicians maintain that they have already had their incomes cut by the fact that a great many insured patients were lost to them through widespread unemployment. Furthermore, most of the unemployed turn to the medical practitioners in case of sickness and they have to treat them free of charge if they want to preserve their reputation. The insurance administration is working on a reform of the present law to secure certain economies in the insurance scheme by reducing radically the sickness insurance cash benefit and transmitting the burden of chronic cases to the invalidity insurance, which is in a better financial situation than the sickness insurance.

Death of Milan Janů

The medical profession has suffered a serious loss in the sudden death of Dr. Milan Janů at the age of 47. Janů was the head of an important gynecologic department of one of the largest hospitals in Prague. Lately he became also lecturer of gynecology at the Czech medical faculty of Prague. His main achievement was in the field of professional organization. When at the close of the war in 1919 there appeared a strong opposition from young physicians to the official medical organization, Janů, who was put at the head of it, succeeded in making this movement constructive. He organized the Young Generation of Czechoslovakian Physicians and gave this body a definite and well rounded program of activities. He conceived it as a movement for the adaptation of medical practice to new forms of social life. He founded a periodical, the *Medical Practitioner,* which became the most widely read medical journal among practitioners in Czechoslovakia. He was responsible also for the interest which the Young Generation of Czechoslovakian Physicians has taken in the development of social medicine. He emphasized that it is a duty of the practitioner to cooperate with public health authorities in the work of public health clinics. He was a past-president of the Prague Rotary Club and he considered it his special task to be of assistance to American physicians coming to Czechoslovakia. His sudden death at the age of 47 will be a sad surprise to his many friends even outside of Czechoslovakia.

Marriages

WILLIAM J. FEEHAN, Kansas City, Kan., to Miss Antoinette Brazill in Tulsa, Okla., Dec. 26, 1932.

WILLIAM ARTHUR SHUCK, Indianapolis, to Miss Elizabeth Huey of Monticello, Ind., Dec. 24, 1932.

THOMAS A. DAVIS, Portland, Ore., to Miss Frances Kennedy of Long View, Wash., January 12.

LLOYD S. NEASE, Newport, Tenn., to Miss Mary Will Ault of Knoxville, Dec. 24, 1932.

ALEXANDER A. LEVI to Miss Dorothy Helen Hite, both of Boston, Oct. 12, 1932.

Deaths

Lloyd Earl Tefft ⊕ Major, U. S. Army, retired, Bradford, Pa.; University of Michigan Medical School, Ann Arbor, 1911; was appointed first lieutenant in the medical reserve corps in 1914 and vacated in 1915; appointed first lieutenant in the medical corps of the regular army in 1915; was promoted to major in 1917 and retired for disability in line of duty in 1928; aged 42; died, January 9, of pulmonary tuberculosis and erysipelas.

Robert Hawthorne Wylie ⊕ New York; University of the City of New York Medical Department, 1885; emeritus professor of gynecology, New York Polyclinic Medical School and Hospital; formerly on the staffs of the Bellevue Hospital, New York Polyclinic Hospital, St. Elizabeth's Hospital, Woman's Hospital, New York, and the Hackensack (N. J.) Hospital; aged 69; died, January 13, of influenza.

George Keesee Vanderslice, Hampton, Va.; University of Virginia Department of Medicine, Charlottesville, 1892; member of the Medical Society of Virginia; past president and secretary of the Elizabeth City County Medical Society; fellow of the American College of Surgeons; for many years county coroner; surgeon to the Dixie Hospital; aged 62; died, Dec. 19, 1932, of pneumonia.

Charles Buckley Maits ⊕ Pittsburgh; University of Pennsylvania School of Medicine, Philadelphia, 1910; instructor in medicine, University of Pittsburgh School of Medicine; director of the department of public health of Pittsburgh; served during the World War; on the staff of St. Francis Hospital; aged 48; died, January 1, of hypostatic pneumonia.

Daniel Edward Berney ⊕ Scranton, Pa.; Jefferson Medical College of Philadelphia, 1911; past president of the Lackawanna County Medical Society; served during the World War; chief of staff, St. Joseph's Children's and Maternity Hospital; attending pediatrist to the Scranton State and Mercy hospitals; aged 45; died, January 11, of cerebral hemorrhage.

William Joseph Walsh, New York; Fordham University School of Medicine, New York, 1917; member of the Medical Society of the State of New York; honorary police surgeon and physician to the New York Giants baseball team; aged 41; died, Dec. 15, 1932, in the Lutheran Hospital, of wounds received when he was shot by an ex-convict.

Frederick Augustus Morrell ⊕ Putnam, Conn.; Long Island College Hospital, Brooklyn, 1885; past president and secretary of the Windham County Medical Society; for many years member of the school board; on the staff of the Day Kimball Hospital; aged 75; died, Dec. 27, 1932, at the Hartford (Conn.) Retreat, of pneumonia.

Harvey Worth Sigmond ⊕ Crawfordsville, Ind.; Hospital College of Medicine, Louisville, Ky., 1898; member of the Radiological Society of North America; served during the World War; aged 61; on the staff of the Culver Hospital, where he died, January 3, as the result of an automobile accident.

William A. Mudd, Detroit; University of Louisville (Ky.) School of Medicine, 1870; member of the Illinois State Medical Society; past president and secretary of the Menard County (Ill.) Medical Society; formerly mayor of Athens, Ill.; aged 85; died, Dec. 28, 1932, of chronic myocarditis and arteriosclerosis.

Joseph Decatur Rogers ⊕ Washington, D. C.; Columbian University Medical Department, Washington, 1902; member of the Medical Society of Virginia; coroner; medical superintendent of the Eastern Dispensary and Casualty Hospital; aged 52; died, January 12, of atrophic biliary cirrhosis.

James Enoch Silliman, Erie, Pa.; Jefferson Medical College of Philadelphia, 1874; member of the Medical Society of the State of Pennsylvania; formerly county coroner; aged 88; on the staff of St. Vincent's Hospital, where he died, January 4, of cerebral hemorrhage and mitral stenosis.

LaFayette Isley, Excelsior Springs, Mo.; Eclectic Medical University, Kansas City, 1901; Kansas City College of Medicine and Surgery, 1916; member of the Missouri State Medical Society; health officer of Excelsior Springs; aged 68; died, Nov. 18, 1932, of pulmonary tuberculosis.

Frank Edward Culp ⊕ Wenatchee, Wash.; College of Physicians and Surgeons, Chicago, 1896; for many years health officer of Wenatchee; on the staffs of the Central Washington Deaconess Hospital and St. Anthony's Hospital; aged 58; died, Dec. 6, 1932, of uremia.

De Laskie Smith, Lebanon, Ind.; Medical College of Indiana, Indianapolis, 1901; past president of the Boone County Medical Society; formerly county coroner, city health officer and member of the city council; aged 59; died, January 5, of injuries received in a fall.

James D. Windell, Spokane, Wash.; Trinity Medical College, Toronto, Ont., Canada, 1894; member of the Washington State Medical Association; aged 70; died, Dec. 20, 1932, in the Sacred Heart Hospital, of cerebral hemorrhage and coronary sclerosis.

William H. Owens, Milwaukee; Milwaukee Medical College, 1908; member of the State Medical Society of Wisconsin; on the staffs of St. Joseph's Hospital and St. Mary's Hospital; aged 48; died, Dec. 26, 1932, of cerebral embolism and chronic duodenal ulcer.

John Hodgson McCullough, Jr., Trenton, N. J.; Hahnemann Medical College and Hospital of Philadelphia, 1928; on the staff of the William McKinley Memorial Hospital; aged 28; was found dead, January 9, of illuminating gas poisoning.

Caesar Deutsch, New York; Ekaterinoslav Medical Institute, Dnipropetrovsk (Ekaterinoslav), Ukraine, Russia, 1895; Eclectic Medical College of the City of New York, 1903; aged 61; died, January 12, in the People's Hospital, of heart disease.

Wallace Wadsworth Dyson ⊕ Portland, Maine; Medical School of Maine, Portland, 1900; on the staffs of the Maine General Hospital, Portland, and the Webber Hospital, Biddeford; aged 61; died suddenly, January 12, of heart disease.

Francis Marion Thornhill ⊕ Arcadia, La.; Medical Department of the University of Louisiana, New Orleans, 1872; past president of the Louisiana State Board of Medical Examiners; aged 83; died, Dec. 5, 1932, of arteriosclerosis.

Thomas Spencer Owen, Elwood, Ind.; Columbus (Ohio) Medical College, 1892; member of the Indiana State Medical Association; aged 63; died, Dec. 30, 1932, in the Methodist Episcopal Hospital, Indianapolis, of pneumonia and uremia.

Samuel Herbert Calderwood ⊕ Boston; Boston University School of Medicine, 1875; formerly secretary of the Massachusetts Board of Registration in Medicine; aged 80; died, January 13, of coronary thrombosis and arteriosclerosis.

Edward William Meis ⊕ Sioux City, Iowa; State University of Iowa College of Medicine, Iowa City, 1900; fellow of the American College of Physicians; aged 55; died, Dec. 7, 1932, in a local hospital, of carcinoma of the stomach.

Oran Purdy Andrews, East Liverpool, Ohio; College of Physicians and Surgeons in the City of New York, Medical Department of Columbia University, 1893; served during the World War; aged 62; died, January 6, of pneumonia.

Samuel Garrett Cardon, Center, Ala.; Medical Department of the University of Alabama, Mobile, 1902; member of the Medical Association of the State of Alabama; aged 54; was killed, January 6, in an automobile accident.

Clifford R. Sperow, Martinsburg, W. Va.; University of Virginia Department of Medicine, Charlottesville, 1898; member of the West Virginia State Medical Association; aged 57; died, Dec. 9, 1932, of chronic myocarditis.

Richard Henry Sweetman, Sauk Center, Minn.; College of Physicians and Surgeons, Chicago, 1896; an affiliate fellow of the American Medical Association; aged 66; died, January 14, of heart disease and pneumonia.

Oscar James Gilchrist, Rutland, Vt.; Long Island College Hospital, Brooklyn, 1874; member of the Vermont State Medical Society; aged 83; died, January 2, of hypertensive heart disease and arteriosclerosis.

John F. Fair, Freeport, Ill.; Medical Department of the University of the City of New York, 1881; Jefferson Medical College of Philadelphia, 1885; aged 77; died, January 2, in St. Francis Hospital, of uremia.

Charles A. Stevens ⊕ Chicago; Northwestern University Medical School, Chicago, 1899; served during the World War; on the staff of the Evangelical Hospital; aged 61; died, January 3, of cerebral hemorrhage.

Robert Ernest Sumner, Rock Hill, S. C.; University of Pennsylvania School of Medicine, Philadelphia, 1910; member of the South Carolina Medical Association; aged 48; died, January 19, of pneumonia.

Maurice William Aton, Chicago, Ill.; Loyola University School of Medicine, Chicago, 1917; member of the Illinois State Medical Society; aged 46; died, January 7, in Dayton, Pa., of angina pectoris.

Daniel Maria Guiteras ⊕ Surg. Lieut., U. S. Navy, retired, Denver; University of Pennsylvania School of Medicine, Philadelphia, 1874; entered the navy in 1879; aged 79; died, January 2, in San Diego.

George Hills Francis, Brookline, Mass.; Harvard University Medical School, Boston, 1887; member of the Massachusetts Medical Society; aged 72; died, January 1, of heart disease and cerebral embolus.

Espy Eugine Little, Statesville, N. C.; North Carolina Medical College, Charlotte, 1912; aged 45; died, January 11, in the University Hospital, Philadelphia, following an operation for brain tumor.

David Austin Fox, Jr., Clinton, Conn.; University and Bellevue Hospital Medical College, New York, 1902; member of the Connecticut State Medical Society; aged 55; died, January 3, of carcinoma.

William Alexander Daugherty, Massillon, Ohio; Kentucky School of Medicine, Louisville, 1904; member of the Ohio State Medical Association; aged 73; died, January 5, of lobar pneumonia.

Warren Levi Diller, Nicholson, Pa.; University of Vermont College of Medicine, Burlington, 1909; served during the World War; aged 56; died, January 3, of myocarditis and diabetes mellitus.

B. Frank Walters ⊕ Durango, Colo.; Medico-Chirurgical College of Philadelphia, 1898; aged 61; died, January 19, in the Mercy Hospital, Denver, following an operation for tumor of spinal cord.

Frank William Arnold, Milwaukee; Milwaukee Medical College, 1902; member of the State Medical Society of Wisconsin; aged 59; died, January 12, in St. Luke's Hospital, of pneumonia.

J. Hamilton Gray, Morrison, Ill.; Hahnemann Medical College and Hospital, Chicago, 1883; formerly member of the state legislature; aged 75; died, January 12, of pneumonia and influenza.

Morris Campbell Tarr ⊕ Wellsville, Ohio; University of the City of New York Medical Department, 1881; health officer of Wellsville; aged 79; died, Dec. 10, 1932, of organic heart disease.

Abb Chauncey De Long, San Angelo, Texas (licensed, Texas, under the Act of 1907); member of the State Medical Association of Texas; aged 73; died, Oct. 30, 1932, of heart disease.

John J. Leahy, Lemont, Ill.; Rush Medical College, Chicago, 1885; for many years township and village health officer; president of the board of education; aged 69; died, January 24.

Edwin Devereux Jaques, South Berwick, Maine; Medical School of Maine, Portland, 1868; member of the Maine Medical Association; aged 91; died, Dec. 16, 1932, of arteriosclerosis.

Augustus W. Mercer, Chicago; Western Reserve University Medical Department, Cleveland, 1901; aged 65; died, January 1, of coronary sclerosis and chronic myocarditis.

Joseph P. Ghio, St. Louis; Marion-Sims College of Medicine, St. Louis, 1897; veteran of the Spanish-American War; aged 58; was found dead, January 10, of heart disease.

Joe Brown Rolater ⊕ Oklahoma City, Okla.; Vanderbilt University School of Medicine, Nashville, Tenn., 1884; aged 71; died, Dec. 18, 1932, at his home in Cave Spring, Ga.

Gerhardt Herman Raithel ⊕ Washington, Mo.; Missouri Medical College, St. Louis, 1898; served during the World War; aged 61; died, Dec. 25, 1932, of heart disease.

Irvin W. Trees, Greenfield, Ind.; Medical Department of Butler University, Indianapolis, 1880; aged 81; died, Dec. 30, 1932, in the Robert W. Long Hospital, Indianapolis.

Charles Frederick Crittenden ⊕ Alameda, Calif.; Hahnemann Medical College of the Pacific, San Francisco, 1902; aged 53; died, Nov. 15, 1932, of coronary occlusion.

Ernest Mason Vaughan, Jr., Providence, R. I.; Hahnemann Medical College and Hospital of Philadelphia, 1930; aged 26; died, Oct. 15, 1932, of pulmonary tuberculosis.

Charles R. Andrews, Atlanta, Ga.; Atlanta College of Physicians and Surgeons, 1903; aged 53; died, Dec. 24, 1932, of an incised wound of the arm, self inflicted.

Leonardo S. Clark, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1867; aged 85; died, Dec. 29, 1932, in the Presbyterian Hospital.

William Stager Helman, Avoca, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1903; aged 55; died, Dec. 24, 1932, of coronary thrombosis.

Henry A. Fitch ⊕ Utica, N. Y.; University of Michigan Medical School, Ann Arbor, 1878; aged 84; died, January 5, of bronchopneumonia and diabetes mellitus.

John B. McBride, Zanesville, Ohio; Cleveland University of Medicine and Surgery, 1896; aged 65; died, January 3, of bronchopneumonia and chronic bronchitis.

James Weir Craig ⊕ Loveland, Colo.; Denver College of Physicians and Surgeons, 1906; aged 52; died, in December, 1932, of acute hemorrhagic pancreatitis.

James Douglas Dinsmore, Port Clyde, N. S., Canada; Halifax Medical College, Halifax, N. S., 1877; aged 88; died, Nov. 27, 1932, at Manchester, N. H.

Robert Taylor Franklin ⊕ Glendale, Ariz.; University of Tennessee College of Medicine, Memphis, 1919; aged 36; died suddenly, January 1, of heart disease.

Erle Byron Crosby ⊕ Valley City, N. D.; Medical Department of Hamline University, Minneapolis, 1907; aged 51; died, January 4, of asthma and pneumonia.

Ferdinand G. Mohlau ⊕ Buffalo; University of Buffalo School of Medicine, 1892; aged 66; died, Dec. 27, 1932, of myocarditis and aortic insufficiency.

George W. Norman, Jamestown, N. C.; Baltimore Medical College, 1896; aged 60; died, January 7, in a hospital at High Point, of pneumonia and influenza.

Edgar Collins ⊕ Birmingham, Ala.; Birmingham Medical College, 1906; aged 48; died, Dec. 30, 1932, in the Highland Baptist Hospital, of acute nephritis.

Charles Brigham Chedel ⊕ Middletown, Conn.; Dartmouth Medical School, Hanover, N. H., 1906; aged 52; died, Dec. 31, 1932, of coronary thrombosis.

George L. Dickinson, Horatio, Ark.; Medical Department of Arkansas Industrial University, Little Rock, 1892; aged 76; died, January 5, of pneumonia.

George Moore Wampler, Jasper, Tenn.; Vanderbilt University School of Medicine, Nashville, 1917; aged 39; died, Dec. 24, 1932, of pneumonia.

John Ayd, Baltimore; College of Physicians and Surgeons, Baltimore, 1886; aged 79; died, January 3, in Hydes, Md., of carcinoma of the intestine.

Alfa R. Leib, Elkhart, Ind.; Homeopathic Hospital College, Cleveland, 1886; aged 72; died, January 2, of cerebral hemorrhage and influenza.

William Melvin Ruckle ⊕ Wisconsin Rapids, Wis.; Chicago Homeopathic Medical College, 1903; aged 55; died, Dec. 28, 1932, of thrombosis.

Isaac Newton Brent, Crawfordsville, Ind.; Hospital College of Medicine, Louisville, Ky., 1875; aged 87; died, January 13, of myocarditis.

Benjamin Burroughs Ralph, Kansas City, Mo.; Kansas City Medical College, 1897; aged 58; died, January 5, of coronary thrombosis.

John Dunphy, Boston (licensed, Massachusetts, by years of practice); aged 60; died, January 1, in the City Hospital, of pulmonary embolus.

William Percy Miles, Northport, N. Y.; Long Island College Hospital, Brooklyn, 1892; aged 62; died, Nov. 27, 1932, of heart disease.

James N. Cunningham, Stanley, Wis.; Marion-Sims College of Medicine, St. Louis, 1899; aged 64; died, Dec. 30, 1932, of heart disease.

La Fayette Gracey, Jonesboro, Ark.; Memphis (Tenn.) Hospital Medical College, 1891; aged 67; died, January 1, of arteriosclerosis.

Clovis Mayrand, Donnacona, Que., Canada; Laval University Faculty of Medicine, 1924; aged 33; died, Nov. 21, 1932.

August Kleykamp, St. Louis; Missouri Medical College, St. Louis, 1888; aged 74; died, Dec. 6, 1932, of heart disease.

Sigmund Feinberg, New York; University of Erlangen, Germany, 1871; aged 90; died, Dec. 14, 1932, of arteriosclerosis.

Grant Irwin ⊕ Quincy, Ill.; Quincy College of Medicine, 1886; aged 67; died suddenly, January 12, of heart disease.

James Gordon Berry ⊕ Chicago; Rush Medical College, Chicago, 1875; aged 82; died, January 19, of myocarditis.

Richard Huizenga, Rock Valley, Iowa; Rush Medical College, Chicago, 1902; aged 56; died, Nov. 29, 1932.

Francis William Mincks, Portland, Ind. (licensed, Indiana, 1897); aged 74; died, Dec. 26, 1932, of heart disease.

James Ashworth, Westplains, Mo. (licensed, Missouri, 1883); aged 83; died, January 8, of influenza.

Daniel Kerr, Detroit; Detroit College of Medicine, 1889; aged 72; died, Dec. 15, 1932, of heart disease.

Correspondence

DANGER OF SERUM IN ASTHMA

To the Editor:—In THE JOURNAL, Dec. 3, 1932, a report is made by the Bureau of Investigation concerning one Brengle and "forty successful treatments, including some sure cures," in which injections of diphtheria antitoxin are advised for the cure of asthma.

Jan. 26, 1909, I read a paper before the New York State Medical Society entitled "Untoward Results from Diphtheria Antitoxin, with Special Reference to Asthma." The clinical history of twenty-eight cases was furnished in which either death or collapse followed the injection of horse serum. Fifteen patients died, thirteen experienced a severe shock, and one patient, after a year of illness, died. When death followed the injection, it came usually within ten minutes of the injection, from respiratory failure, the heart action continuing for some time after respiration ceased. Reports had been published before this date of death or shock following the use of serum, but this paper was the first to give publicity to the danger of administering horse serum to a person who had a history of asthma. Of the twenty-eight cases reported, twenty gave a history of asthma, hay fever, bronchitis, or some form of respiratory distress at times. Since this report was made the field has been well covered to determine some safe procedure to follow in administering horse serum to an asthmatic person, and it is astonishing to learn that any one advises the giving of serum to cure asthma. The foregoing may be water that has gone over the dam, but it may prevent any rash physician from following the advice and thereby save many lives.

H. F. GILLETTE, M.D.,
Port Washington, N. Y.

PHENOBARBITAL AND AMYTAL IN STRYCHNINE POISONING

To the Editor:—In April, 1932, we published a report of an investigation on the antagonism between strychnine and phenobarbital sodium (Antidotes for Strychnine Poisoning, THE JOURNAL, April 2, 1932, p. 1133). In our experiments, carried out on rats and dogs, we found that phenobarbital in large doses controlled strychnine convulsions and allowed recovery after five times the lethal dose of strychnine and that, conversely, strychnine acted as an antidote for phenobarbital sodium, allowing recovery after amounts three times that of the lethal dose.

M. C. Wheelock (Strychnine Poisoning, THE JOURNAL, Nov. 26, 1932, p. 1862) has recently reported a case of strychnine poisoning in which convulsions were controlled and a fatal outcome averted by the administration of 0.3 Gm. of phenobarbital sodium and 1.3 Gm. of sodium amytal given intravenously.

E. E. Swanson (*J. Lab. & Clin. Med.* **17**:325 [Jan.] 1932) has found experimentally that amytal sodium acts as an antidote against strychnine in rabbits and reports clinical applications of this drug in cases of strychnine poisoning by Zerfas and McCallum (*Anesth. & Analg.* **8**:349 [Nov.-Dec.] 1929).

Since our work was carried out on rats with the drugs injected intraperitoneally and theirs on rabbits with subcutaneous, intravenous and oral administration, it is difficult from the two reports to make comparison of the effectiveness of amytal sodium and phenobarbital sodium as antidotes for strychnine. We have therefore extended our investigation to include amytal sodium, using the method previously employed for phenobarbital sodium.

Instead of taking the minimal lethal dose as a criterion of toxicity as did Swanson, we used the absolutely lethal dose, the smallest amount from which none of the animals recovered. For rats given intraperitoneal injections of strychnine the absolutely lethal dose is 3 mg. per kilogram. As reported, phenobarbital sodium allowed recovery after administration of from 12 to 14 mg. of strychnine per kilogram—between four and five times the absolutely lethal dose.

In our recent investigation the substitution of amytal sodium for phenobarbital sodium allowed recovery after 7 mg. per kilogram, or approximately two and a half times the absolutely lethal dose.

From these results it would appear that, for rats at least, phenobarbital sodium is more effective as an antidote against strychnine than is sodium amytal.

On rats, attempts to use a combination of the two drugs as an antidote, as did Wheeler, were found by us to afford no advantage. Amytal sodium and phenobarbital sodium for rats are not completely additive in their toxic effects; approximately two-thirds the lethal dose of each can be administered simultaneously without producing death in these animals, but the combination does not appear to afford a better antidote for strychnine than does phenobarbital sodium administered alone.

HOWARD W. HAGGARD, M.D.,
LEON A. GREENBERG, PH.B.,
New Haven, Conn.

"FUNCTIONAL CAPACITY OF THE LIVER"

To the Editor:—In the article by Robertson, Swalm and Konzelmann in THE JOURNAL, Dec. 17, 1932, appears an evaluation of the urobilinogen test. The success of the test always depends on the free flow of bile into the intestinal canal. As this may vary from day to day in certain pathologic states, it becomes necessary to examine the urine daily before any definite conclusion can be reached, in some instances. An afternoon specimen is more desirable in view of the physiologically increased postprandial activity of the liver. A strongly positive reaction is always indicative of parenchymatous damage to the liver cells. The *bête noire* referred to by Eusterman in his discussion on the differential diagnosis of jaundice can be readily overcome. When a strongly positive urobilinogen reaction appears in a jaundiced person in a urine containing bile, one may definitely conclude that one is dealing with a toxic hepatitis or catarrhal jaundice, which requires medical or expectant treatment. However, when a daily search for urobilinogen, in a urine containing bile, gives a negative reaction, one may feel definitely certain of the presence of a mechanical block in the common duct, requiring surgical intervention. This test is certainly much simpler than the repeated intubation of the duodenum in search for the presence of bile, which in itself tells but half the tale, as it fails to give information regarding the state of the liver parenchyma, which is readily obtained with the urobilinogen test.

The technical advantages of this test over the zinc acetate test for urobilin is that it requires no complicated laboratory steps but is a simple office procedure of which any practitioner of medicine can avail himself. It consists merely of the addition of Ehrlich's aldehyde reagent to a test tube of urine. The intensity of the red coloration may be expressed in terms of 1, 2, 3 or 4 plus, thus eliminating any quantitative tests for the general use.

May I also comment on the views expressed as to the preference by the authors of the icteric index to the van den Bergh reaction. The van den Bergh test is a direct reaction of bilirubin with the diazo reagent and is not due to any other factor. It appears inconsistent, therefore, to obtain a high icteric index in a serum giving a negative or low indirect van den Bergh reaction, as is quoted in the authors' series in case 10 under the cardiac group (table 1, group 1) giving an icteric index of 14 and a negative van den Bergh test, and in table 3, group 3, hepatic diseases, cases 63 and 67 with icteric indexes of 10 and 15, respectively, and low van den Bergh tests. The yellow discoloration is probably not due to bilirubin in such instances. JOSEPH S. DIAMOND, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

POSTMORTEM RESULTS IN ALCOHOLISM

To the Editor:—Among other things, the autopsy of a man of 45 disclosed that the chemical examination of the brain revealed the presence of 3 plus ethyl alcohol. Would this mean that, at the time of death the man was intoxicated? Is it possible, in the case of a person addicted to the use of alcohol, for the presence of this much alcohol in the brain to be due to accumulation without indulgence prior to his death? On what is determined the presence of 3 plus alcohol and how would such a calculation be made?

CHARLES WEINREB, M.D., New York.

ANSWER.—The man was intoxicated when he died. It would be impossible to obtain a 3 plus concentration of alcohol in the brain without the ingestion of alcoholic fluid during the twenty-four hours before death. An alcoholic addict could not build up any such concentration without taking in alcohol shortly before dying. Persons chronically addicted to the use of alcohol have an increased power to destroy or oxidize alcohol. The designation 3 plus ethyl alcohol means that the brain tissue contained 0.4 per cent of alcohol. The details for the determination of the amount of alcohol and the interpretation of the significance of the alcoholic concentration are described by A. O. Gettler and Arthur Tiber: The Alcoholic Content of the Human Brain: Its Relation to Intoxication, *Arch. Path.* **3**:218 (Feb.) 1927, and A. O. Gettler: Chemical Evidences of Alcoholic Intoxication and Their Medicolegal Significance, *New England J. Med.* **201**:725 (Oct. 10) 1929.

REPEATED CORYZA IN A CHILD

To the Editor:—My daughter, aged 6, is suffering from attacks of repeated head colds. During the summer months she is free, but in the fall, with change in weather, she goes down. I notice that inside of seventy-two hours following acute coryza, a harsh metallic and unproductive cough develops. The nocturnal coughing persists until attacks of vomiting set in. It is with considerable difficulty that any nourishment taken by mouth can be retained for some days. The temperature is 102; pulse, 90; respiration, 28. Then all of a sudden the vomiting and coughing cease, the temperature becomes normal and the patient begins taking food with avidity. The tonsils and adenoids were removed four years ago. Roentgen examination of the chest is negative for tuberculosis; examination of the urine is negative. She has had continued courses of malt, viosterol, and so on besides series of ultraviolet irradiations. Every care and consideration have been given to ward off these attacks of "catching cold." What do you believe is at the bottom of her trouble: regrowth of adenoids, sinus involvement, food or other allergy, hereditary dyscrasia, too much coddling, or what? Please omit name.

M.D., Ohio.

ANSWER.—The clinical picture furnished seems rather typical for acute infection of the upper respiratory tract occurring at the onset of cold weather. Variations of this syndrome are common. The symptoms in this child include coryza, subsequent fever, development of cough apparently without positive chest signs, aggravation of nocturnal cough sufficient to provoke vomiting, and subsidence of symptoms with return of appetite. Vomiting may be dismissed as an individual peculiarity due to throat irritation and gagging. The return of an avid appetite is simply the compensatory phenomenon subsequent to a relative starvation. The remaining symptoms of coryza, fever and significantly nocturnal cough may be considered as standard or constant symptoms in the so-called infection of the upper respiratory tract, influenza, grip or cold.

Leaving aside such intangible and variable elements as infection, immunity, inherited predisposition and vitamins, the common factor is change in weather from summer to fall. This is tantamount to the familiar but insufficiently appreciated "exposure to cold and damp." Exposure to cold is not necessarily measured in degrees registered by the thermometer but rather in terms of degrees of drop and increased humidity. Thus, the child who suffers at the beginning of fall becomes acclimated and is able to endure colder weather later in the season. When the temperature drops precipitously in midwinter there is another attack, and during such periods occur the familiar epidemics of so-called influenza.

The rôle of cold also explains the aggravation of the cough with paroxysms at night. Ordinarily the sleeping room temperature drops during the night hours, and the body temperature falls likewise from loss of body tone incident to relaxation. The mechanism is probably the same in tired, debilitated and old persons who "feel" the cold because of reduced body tone and diminished muscular activity. During the day the individual is active enough to neutralize the chilling effect of cold and humidity by increased muscle tone. This general concept of the rôle of the heat regulating mechanism fits the clinical conditions even though the precise mechanism may not be accurately demonstrated. It seems possible that the direct etiology of this type of "upper respiratory infection" is the cold factor and that bacteria play a secondary part in point of chronology, particularly if it is remembered that the various bacteria isolated from the "common cold" are common inhabitants of normal individuals.

Since the child is going to suffer chance degrees of exposure, it is well to regulate her acclimitization. This may be accomplished simply by cold sprays, showers, rubs or ice rubs after a warm bath on retiring. During attacks the bedroom should not be chilled, and heat may be supplied to the respiratory tract by effective steam inhalations.

PARACHLORMETAXYLENOL

To the Editor:—A material known as parachlormetaxylenol, imported into this country by the Monsanto Chemical Works from its manufacturing plant in North Wales, is used for the prevention of mildew, and is incorporated in a starch and tallow solution in the proportion of about 0.75 per cent. This solution is boiled for a given period and the point that I wish to determine is whether or not there would be danger in inhaling the fumes from this solution. For use in the cotton mills, this preparation is diluted in a starch and tallow solution, to the extent of the final mixture containing about 0.1 per cent of the xylenol. This solution is boiled for an hour or two at the mills, and I wish also to check up on the possible toxicity of the xylenol in this 0.1 per cent solution. Any information you can furnish me will be greatly appreciated. Please omit name and city.

M.D., Virginia.

ANSWER.—Xylenols are the principal constituents of some coal tar cresylic acids. Chlorinated xylenols long have been utilized as insecticides, fungicides and bactericides. One of the virtues of this class of substances, as represented by their sponsors, is their negligible toxicity in distinction to the simpler phenols. Many trade names have come into being, such as "sagrotan," "phobrol," "grotan" and "thissirol." The first named in 10 per cent strength has been recommended by Unna for application to the skin in scabies. Schottelius states that the substance is relatively nontoxic, as no harm is produced in dogs when administered orally in doses of 10 Gm. per kilogram of body weight.

Parachlormetaxylenol (C_8H_9OCl), with its boiling point near 215 C., is little likely to evaporate in appreciable quantities even when in boiling water. The small quantities mentioned in the query further militate against practical danger from vapors. Use of similar chemicals in the treatment of skin lesions restrains the belief that skin irritation may be induced by high dilutions. Extensive toxicologic work with parachlormetaxylenol is not known to have been carried out. For the present a high degree of toxicity apparently is not on record.

USE OF TRIBROM-ETHANOL IN OPERATION ON HENRY FORD

To the Editor:—Can you give me some information regarding the new anesthetic they gave Henry Ford when he was operated on for hernia? What was the name: Avertin? What are its uses and action, and how it is given?

FRED G. BUSHOLD, M.D., Lawrence, Mass.

ANSWER.—This question was referred to Dr. R. D. McClure, who replies as follows:

"The anesthetic given to the patient was avertin (tribromethanol) solution. It was given by rectum as a basal anesthetic supplemented with ethylene gas. Willstätter made the original preparation of avertin, which consists of the yeast reduction of tribromacetaldehyde and introduced it into Germany as a rectal anesthetic agent in 1926. We have used avertin as a basal anesthetic for several years. Authorities agree that the safe dose should range between 60 and 100 mg. for each kilogram of body weight.

"The patient goes to sleep in his room within ten to twenty minutes and remains asleep for a period of two to four hours, during which time the operation is carried out as well as immediate postoperative procedures such as intravenous therapy. The blood pressure usually falls on an average of 15 mm. of mercury; the pulse is usually not affected; the respirations are somewhat depressed. Overdose causes death by respiratory paralysis. Caffeine sodiobenzoate and ephedrine may be used to combat cyanosis if it occurs. Once a patient is narcotized with avertin only a small amount of ethylene, nitrous oxide, ether or local supplemental anesthesia is required for good relaxation. Following the operation, it is good practice to ventilate the lungs with carbon dioxide and oxygen as a prophylaxis against pulmonary complications, and this procedure was

used in the case under discussion. There is no recollection of events from the time of the injection until several hours later.

"The operation on this patient was for a strangulated femoral hernia; and a gangrenous appendix, due to the strangulation, was the only content of the sac. The appendix was removed through the same incision; and after the stump of the appendix had been inverted a high ligation of the sac was carried out by means of purse string sutures. A portion of Poupart's ligament was sutured to the pectineal fascia and muscle.

"Leigh F. Watson, in his book 'Hernia,' 1924 edition, found only 217 cases of femoral hernia of the appendix alone. Of these in only 181 cases was the sex given and of these only four were males. We have found so far only three or four other cases in the literature. We believe that a gangrenous appendicitis *in the male* due to strangulation in a femoral sac is an extremely rare condition and that successful removal of such an appendix through the hernia opening is still more rare. Realizing that many cases are not reported in the literature, I shall be glad to receive reports of any such cases from physicians who may chance to read these lines."

There are, of course, several other preparations that may be used for basal anesthesia.

ANTIPRURITIC DRUGS

To the Editor:—Can you offer some suggestions for an antipruritic which may be incorporated in an ointment base such as hydrous wool fat and petrolatum or cold cream? Though I make frequent use of 1 per cent phenol in washes (e. g., compound calamine lotion, N. F.) I have always been afraid to use it in ointments lest I cause some degree of necrosis. Menthol, the other standby of dermatologic textbooks, has not given satisfactory results. Would it be desirable to combine 10 per cent benzyl alcohol, to produce an immediate effect, with 5 per cent ethyl-aminobenzoate or 1 per cent butesin to yield a more lasting effect? I am assuming that coal tar solution in concentrations sufficient to be antipruritic is open to the same objections as phenol. In this connection, can you give me information about the active antipruritic principle in "Obtundia Cream," manufactured by Otis Clapp of Boston? Please omit name.

M.D., Massachusetts.

ANSWER.—Phenol, which has been called the "opium of the skin" because of its antipruritic action, may be used in a 1 per cent concentration in ointment without danger of necrosis, provided the application is not made under an occlusive covering. Nor would there be any objection to the employment of coal tar in suitable strength. Benzyl alcohol might be worth trying as an antipruritic; but not ethylaminobenzoate or butesin, because the two last mentioned do not exert anesthetic effect when applied to the intact epidermis. "Obtundia Cream" has not been examined by the Chemical Laboratory of the American Medical Association; its composition is not declared by the firms advertising or in catalogues in the Laboratory files. In addition to making extravagant claims as to its analgesic value, it has been stated that the manufacturers claim the major constituent to be "a molecular compound of 1,7,7 trimethyl-bicyclo (2,2,1) heptanone-2 and 1-methyl-3-hydroxy-benzene," which suggests that these ingredients are nothing more or less than camphor and metacresol.

ROENTGENS AND OTHER UNITS OF X-RAY DOSAGE

To the Editor:—In Queries and Minor Notes (THE JOURNAL, Oct. 1, 1932, p. 1192) there is a query regarding aphonia after roentgen treatment. In the query occurs the following sentence: "I have given her three one-fourth unit doses of unfiltered x-rays at weekly intervals." In your answer you state that "Assuming that a unit dose amounts to about 260 roentgens . . . the physician gave at each x-ray application about 40 roentgens." As one fourth of 260 is certainly not 40, it is obvious that there is an error. Because of the fact that there are many men who do not know the relationship between roentgens and the older unit dose it would seem wise to have this little error, in an otherwise excellent answer, corrected.

H. H. HAZEN, M.D., Washington, D. C.

ANSWER.—In the statement referred to, there is an arithmetical error, the number of roentgens corresponding to one fourth of a unit of dosage being 65 instead of 40.

As explained in the second paragraph of the statement referred to, the modern and safer method of estimating dosage with roentgen rays is by calculating in terms of "roentgens" instead of a unit dose. The latter term was popularized by dermatologists, as representing the amount of radiation that would cause a slight erythema and bring about epilation. As a matter of fact, the differences in the judgment of various individuals as to what constitutes erythema makes this standard somewhat unsatisfactory. It also requires the therapist to do a certain amount of preliminary experimental work every time he acquires a new tube or uses his old tube under different conditions of line voltage.

Recognizing the unsatisfactory character of the unit dose standard, and in view of the international acceptance of the "roentgen" (symbolized as r) as the unit of dosage and its employment not only in roentgen therapy but also in radium therapy and in ultraviolet and grenz ray therapy, it seems advantageous to adopt everywhere the international r as the unit in which to prescribe and record the dosage for roentgen applications. It is to be hoped that all users of roentgen therapy will fall in line in this practice.

The definition of a "roentgen" sounds complicated: "that quantity of radiation which, when the secondary electrons are fully utilized and the wall effect of the chamber is avoided, produces in 1 cc. of atmospheric air at 0 C. and 760 mm. of mercury pressure such a degree of conductivity that one electrostatic unit of charge is measured at saturation current." Fortunately, the practical employment of the r as a unit of dosage measurement is simple if one acquires an r meter. There are excellent ones on the market of American manufacture, not too expensive. Such an instrument should really constitute an indispensable part of the equipment of every radiologist.

The number of roentgens that constitute the equivalent of the unit dose formerly spoken of varies with the voltage and with the filter employed. Using a peak voltage of 100,000, without filter, the administration of 260 r should produce a mild erythema and subsequent temporary loss of hair. With a small field under treatment, 260 r, previously calculated for a large field, would probably be insufficient. The therapist should measure for himself what his output is for fields of different size.

EFFECTS OF EMOTIONAL REACTION IN PRODUCING ABORTION

To the Editor:—A woman six months pregnant was berated by her landlord and threatened with a foreclosure of a mortgage. She was badly upset. Three days later she noticed a loss of motion of the fetus. Four weeks later I delivered her of a dead fetus. The fetus showed signs of having died a considerable time before. Is it logical to assume that this emotional upset brought on the death of the fetus? Blood pressure readings and urinalyses had been negative previous to this. Examination of the cervix shows an old tear extending to the broad ligament.

M.D., Nebraska.

ANSWER.—Cases of a mental shock bringing on premature labor have been reported from Biblical times. In the First Book of Samuel, 4:19, 20, "the wife of Phineas when she heard the tidings that the Ark of God was taken and that her father-in-law and her husband were dead, she bowed herself and travailed; for her pains came upon her." She died but the baby lived.

Women have been frightened by thunder storms or other shock and reported that the babies died as the result. Abruptio placentae has occurred as a result of mental shock, likewise with death of the baby.

On the other hand, excessive mental and physical shocks have failed to disturb the pregnancy. For example, a woman was thrown on the floor by a drunken husband, who stamped on her abdomen with heavy boots and yet she did not abort. Another woman fell out of a third story window and crashed through the roof of a shed with no interruption of the pregnancy. Recently two cases occurred in Chicago of automobile accidents with fracture of the pelvis near term. Both patients recovered.

In the particular case mentioned, the probabilities are that something other than the mental shock killed the baby and possibly a mild infection traveling up a patulous cervix (both sides were deeply lacerated) caused the baby's death.

TAPEWORM INFESTATION

To the Editor:—A man, aged 22, emaciated and underweight, has had tapeworm (Taenia saginata) infection for about ten years. A number of doctors have treated him without success. I put him on liquids for two days, with a daily laxative, and on the third day gave oleoresin of aspidium in broken doses, 2 drachms (8 Gm.) in all, followed by a laxative of salts, but without results. The patient states that about twelve feet were recovered one time. The case is apparently an obstinate one, and I would appreciate any suggestion as to further treatment. I am unable to determine what other preparations have been used in his case. Please omit name.

M.D., South Carolina.

ANSWER.—In such a case it is necessary to wait for at least three months before repeating the attack, and then only if preglottides are passed. Pelletierine tannate is worthy of a trial, given after the usual preparation in a 0.5 Gm. dose followed in two hours by two tablespoonfuls of castor oil. If the bowels have not acted in an hour, an enema is given. The motions should be passed with the anus immersed in warm water. They should then be strained through black muslin. In case the worm does not appear after the cathartic has

acted, 2 cc. of carbon tetrachloride may be given, followed in one hour by another dose of a saline purgative, such as 15 Gm. of sodium sulphate. Should this attack fail, a shotgun mixture might be used to hunt this elusive specimen, after the usual time required for the reappearance of segments in the stools has elapsed, to make certain that it is still there. Such a combination, containing nearly all the known anthelmintics, is the mixture composed of pumpkin seed, 8 Gm.; cusso, 4 Gm.; granatum, 4 Gm. This is made into an infusion, and to it are added kamala, 4 Gm.; oleoresin of aspidium, 4 Gm.; glycerin, 15 cc.; mucilage of acacia, 15 cc., with water to make 240 cc. After the usual preliminary, this quantity is taken in two drafts two hours apart. Bastedo, from whose book this formula is taken, has several times seen severe gastro-enteric irritation with vertigo and prostration result from this mixture.

BENCE-JONES PROTEIN

To the Editor:—The urinalysis in a case that I am treating at present showed the presence of Bence-Jones protein. This, along with the patient's history and physical examination, suggested the diagnosis of multiple myeloma, which has been confirmed by roentgenograms of the skull, spine and pelvis. A determination of the patient's blood urea was done, the mercury combining power method being used. In coagulation of the blood with trichloracetic acid a milky white precipitate formed in a layer between the serum and the bottom layer of blood cells. The test was repeated several times with fresh reagents and the precipitate always appeared. The same reagents were checked on blood from other patients but did not get any precipitate. Was this milky precipitate Bence-Jones protein in the blood which was brought down by the trichloracetic acid? If so, could not this test be used to detect the presence of Bence-Jones protein in the blood? I am unable to get any help from the available literature on this point. Any information that you can give will be greatly appreciated.

P. D. PEABODY, M.D., Webster, S. D.

ANSWER.—The Bence-Jones protein differs from all other proteins that occur in the blood or urine in its property of precipitating when heated to a temperature of from 45 to 65 C. and of almost completely dissolving on boiling, to reappear again on cooling to from 65 to 85 C.

A second characteristic is the readiness with which it dissolves in dilute ammonia after precipitation with alcohol. The Bence-Jones body is also precipitated by those sustances used in testing for serum albumins, as nitric acid (25 per cent) or trichloracetic acid. It is precipitated by the addition of two volumes of saturated sodium chloride solution to the urine acidified with acetic acid. Two volumes of saturated ammonium sulphate causes complete precipitation. The precipitate can then be purified by washing with alcohol and ether, and dried over sulphuric acid. The Bence-Jones protein is free from phosphorus but contains from 1 to 2 per cent of sulphur. It can be distinguished from normal serum proteins by immunologic reactions (Hektoen and Welker).

The milky white precipitate that formed in the blood on addition of trichloracetic acid was due to the presence of the Bence-Jones protein in the blood, causing a marked increase in the total blood protein. As much as 7.8 per cent of Bence-Jones protein has been found in the blood of patients with multiple myeloma. This interesting protein body may be found in the blood of some patients even when there is no Bence-Jones proteinuria. The reaction with trichloracetic acid is simply a blood protein reaction and not specific, unless the precipitate possesses the characteristics mentioned.

OVARIAN CYST AND DYSMENORRHEA

To the Editor:—Please explain as far as possible how the removal of a small ovarian cyst will cure a case of dysmenorrhea and help sterility in case that has been thoroughly worked up and nothing else found abnormal. Please omit name.

M.D., Massachusetts.

ANSWER.—The removal of a small ovarian cyst by no means uniformly cures dysmenorrhea or overcomes sterility; hence a patient should not be promised that these complaints will definitely be relieved by oophorocystectomy. Occasionally, however, dysmenorrhea does disappear temporarily or permanently after such an operation, and some women do conceive following this procedure. As is well known, there is a strong psychic factor in many cases of painful menstruation, and this factor may be responsible for the disappearance of the pain during the periods that follow an operation. On the other hand, some cases of dysmenorrhea are due to excessive amounts of female sex hormone in the blood; but whether a small ovarian cyst can exert much influence on this hormone is purely conjectural. The cyst may have some detrimental effect on ovulation, which may cause sterility, but this is rare, because small and even relatively large ovarian cysts are not uncommonly found associated with pregnancy.

Dysmenorrhea and sterility are the two most perplexing subjects in gynecology, and much patience and study are required to overcome them. It rarely happens that a simple cause is found to account for painful menstruation when the internal genitalia are normal. The same applies to sterility unless the husband is at fault.

DIABETIC RETINITIS

To the Editor:—I should like help in every way but am asking specifically for a class of diabetic patients, some of whom have been under observation for fifteen years. I should like especially to have assistance in these cases of diabetic retinitis with repeated hemorrhages ("retinal" with floaters). I have made it a rule to use insulin until the urine is sugar free. I have had a locomotive engineer under observation for fifteen years who uses insulin regularly twice daily. There was no sugar in the urine when the blood sugar was 180. He had diabetic abscesses two years ago and lay off in the hospital two weeks. There was sugar in the urine then; the blood sugar was 280. That is all the time he has lost in fifteen years. It seems to me that three divisions of medicine might concentrate to aid in these eye cases: namely, internists, ophthalmologists and those having special knowledge. I may add that none of my class show by any tests given any syphilis or other venereal disease. I shall be thankful for any additional information on this class of cases.

T. E. WALTON, M.D., Danville, Ill.

ANSWER.—There is no known specific for the clearing up of hemorrhages and exudates in the diabetic retina. Experimental study may throw much light on this question. The only safeguard at present is to have the patient follow his diabetic regimen.

In general, one keeps the urine sugar free with diet and insulin.

Today the carbohydrate in the diet would be at least 100 Gm., and as much as could be tolerated with moderate quantities of insulin. The protein for a man of 60 or more would be about 1 Gm. per kilogram of body weight, and the fat in the diet sufficient to be able to maintain the weight at a proper level.

Seriously planned investigations on the conditions of the eyes in diabetic patients are in progress in more than one clinic, and undoubtedly detailed reports will be forthcoming within a year.

Often these patients show high blood pressures and trouble with the arteries, and consequently all the measures that are useful to combat such conditions in the nondiabetic hold for diabetic patients as well.

APHTHOUS STOMATITIS

To the Editor:—I noted with much interest the inquiry about aphthous stomatitis on page 2285 of the issue of Dec. 31, 1932. If no "constitutional" disease is present it is almost certain that some kind of poisoning effect is present, either positively, from something ingested, or negatively, from a lack of certain elements that are needed.

There is no question that exercise in the open air is a help in some cases, nor can the nervous factor be despised. Thorough mastication of food is most important; in some cases the citrus group is most useful in my opinion, though others forbid even minute amounts of any kind of acid. I have found in two cases that grapefruit juice, plenty of it, daily was curative. My friend Dr. C. A. Sullivan of Braintree, Mass., with whom I have discussed the problem of "canker sores" many times, thinks that a combination of zinc chloride solution with aromatics is by far the most satisfactory mouth wash and should be used strong. It is rather strange to me that the books on therapeutics are so neglectful of this condition, as it can be exceedingly troublesome and persistent. I hope that this comment may be of some value to your correspondent.

GEORGE M. SHEAHAN, M.D., Quincy, Mass.

EPINEPHRINE OR EPHEDRINE IN CORONARY THROMBOSIS?

To the Editor:—When reading your answer to this question in THE JOURNAL, January 14, it came to my mind what should be known and understood by the profession generally; i. e., the reversed vessel reflex produced by epinephrine in coronary vessel disease. Epinephrine causes dilatation of the coronary vessels, but when they are diseased it has a tonus (contracting) effect on the vessels, which Prof. Hermann Schlesinger of Vienna thinks is due to vasomotor influence (contraction). He therefore advises against the use of epinephrine in coronary disease.

Asthma cardialis and asthma bronchialis should be carefully differentiated before treatment is begun, and experience in the exhibition of medication in such cases is of great importance.

FREDERICK W. MAYER, M.D., St. Paul.

PENCIL FOR MARKING X-RAY FILMS

To the Editor:—I have discovered that the best pencil for marking x-ray films, test tubes, laboratory flasks, and writing on skin is milady's eyebrow pencil. The marks are easily erasable and the cost is very low.

M. S. SHAINE, M.D., New York.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

ALASKA: Juneau, March 14. Sec., Dr. Harry C. DeVighne, Juneau.

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Milwaukee, June 12. Sec., Dr. William H. Wilder, 122 S. Michigan Blvd., Chicago.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: The *written* examination will be given in cities of the United States and Canada where there is a Diplomate who may be empowered to conduct the examination, April 1. The *general oral, clinical and pathological* examination will be held in Milwaukee, June 13. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OTOLARYNGOLOGY: Milwaukee, June 12. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

CALIFORNIA: Los Angeles, Feb. 27 to March 2. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

CONNECTICUT: *Regular.* Hartford, March 14-15. *Endorsement.* Hartford, March 28. Sec., Dr. Thomas P. Murdock, 147 W. Main St., Meriden. *Homeopathic.* New Haven, March 14. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

MAINE: Portland, March 14-15. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

MASSACHUSETTS: Boston, March 14-16. Sec., Dr. Stephen Rushmore, 144 State House, Boston.

NEW HAMPSHIRE: Concord, March 16-17. Sec., Dr. Charles Duncan, Concord.

OKLAHOMA: Oklahoma City, March 14-15. Sec., Dr. J. M. Byrum, Shawnee.

PUERTO RICO: San Juan, March 7. Sec., Dr. O. Costa Mandry, Box 536, San Juan.

WEST VIRGINIA: Charleston, March 14. Sec., Dr. W. T. Henshaw, State Health Department, Charleston.

Georgia October Examination

Mr. R. C. Coleman, joint-secretary, State Examining Boards, reports the examination held in Atlanta, Oct. 11-12, 1932. Eleven candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Number Passed
Howard University College of Medicine	(1931, 5), (1932, 2)		7
Bennett College of Eclectic Medicine and Surgery	(1901)		1
University of Illinois College of Medicine	(1931), (1932)		2
Cornell University Medical College	(1932)		1

Mr. Coleman also reports 5 physicians licensed by reciprocity with other states from August 22 to October 12. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Arkansas School of Medicine	(1929)		Arkansas
Tulane University of Louisiana School of Med	(1930)		Louisiana
Johns Hopkins University School of Medicine	(1929, 2)		Maryland
Meharry Medical College	(1932)		Tennessee

West Virginia November Report

Dr. W. T. Henshaw, secretary, Public Health Council of West Virginia, reports the written and oral examination held in Morgantown, Nov. 16-18, 1932. The examination covered 11 subjects and included 110 questions. An average of 80 per cent was required to pass. Five candidates were examined, all of whom passed. Eight physicians were licensed by reciprocity with other states and two physicians were licensed by endorsement. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
University of Illinois College of Medicine	(1931)		87.1
University of Maryland School of Medicine and College of Physicians and Surgeons	(1932)		86.7
Tufts College Medical School	(1925)		86.1
Jefferson Medical College of Philadelphia	(1930)		86.6
Medizinische Fakultät der Universität Leipzig	(1926)		80.6

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Georgia Medical Department	(1931)		Georgia
Indiana University School of Medicine	(1914)		Indiana
University of Louisville School of Medicine	(1931)		Kentucky
University of Maryland School of Medicine and College of Physicians and Surgeons	(1928)		Maryland
Medical College of Virginia	(1927), (1928), (1929), (1931)		Virginia

College	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Harvard University Medical School	(1928), (1930)		N. B. M. Ex.

Book Notices

Streptococci in Relation to Man in Health and Disease. By Anna W. Williams, M.D., First Assistant Director, Bureau of Laboratories, Department of Health, City of New York. Cloth. Price, $5. Pp. 260, with illustrations. Baltimore: Williams & Wilkins Company, 1932.

This volume will be welcomed by every student of streptococci. It is a readable and comprehensive account of this perplexing group, giving literature, history, morphology, cultural characteristics, serology, habitat, pathogenicity and classification. In separate chapters various diseases caused by streptococci are considered, including the rôle of streptococci, in local and general infections and as secondary invaders and opportunists.

The first two chapters are devoted to an historical sketch and to a discussion of general characteristics chiefly in relation to classification. The author especially stresses serologic relationships and insists that since many of these are intimately related to pathogenicity and are reasonably permanent they should have some weight in species determination. The limits of certain serologic tests, however, especially exotoxin neutralization, remain undetermined, as indicated in the following quotation: "The Dicks claim that scarlet fever hemolytic streptococci have one kind of toxin. Birkhaug claims that hemolytic streptococci from erysipelas have another specific toxin. We, and others with us, do not agree that a clear cut disease specificity of hemolytic streptococcus exotoxin exists." She concludes these chapters with the statement that at this stage of our knowledge of streptococci any attempts at classification should be considered merely as a more or less temporary and practical aid for this study.

In an important chapter on the incidence of streptococci, stress is laid on their intimate relationship to man and to lower animals and it is pointed out that, since they are universally present, all persons should be considered as potential carriers of these dangerous streptococci.

In the consideration of local and general infections in chapters 4 and 5, an analysis of the work of several investigators appears. The elective localization theory of Rosenow is critically examined pro and con at some length and the following concluding statement made: "While we all know that streptoccoci may vary and dissociate to a certain extent and that they may become more accustomed to growing in one kind of tissue, the majority of us believe that the limits of these changes are not yet determined and that they need to be fully demonstrated before we can draw deductions as to their true significance and value."

The contributions of Gay and his associates and of Besredka and others on local immunity are presented lucidly in connection with local infections, and an attempt is made to evaluate certain therapeutic applications, notably vaccines and intravenous chemotherapy. The timely statement is made that "with the exception of syphilis and the like, no disease has shown evidence of responding satisfactorily to intravenous chemotherapy."

Special chapters are devoted each to erysipelas, scarlet fever and septic sore throat, and the abundant literature on these subjects together with the large amount of work done by this author and her associates in New York is reviewed. She calls attention to the borderline cases in these diseases and points out that several agglutination types of hemolytic streptococci may be found in each. In other words, the clinical manifestation of these streptococcic infections do not strictly parallel the serologic grouping of the organisms.

Following these chapters is an interesting presentation in tabular form of a tentative classification of beta hemolytic streptococci based partly on antigenic reactions in which the varieties scarlatinae, erysipelatis and epidemicus are recognized.

The possible rôle of streptococci in such a variety of diseases as acute rheumatic fever, chronic arthritis, endocarditis, influenza, colds and poliomyelitis is presented in a commendable and impartial way and without attempting to draw final or dogmatic conclusions from a conflicting mass of data on problems evidently requiring far more study than has yet been given them.

In reading the book, one obtains the impression that it is a report of progress. On every page are statements or suggestions of problems still to be solved. It is singularly free from

dogmatic assertions. In its concluding pages is a summary of practical facts that have resulted from investigations in this field. Among others may be mentioned that some of the most dangerous streptococci may be tentatively identified by differential mediums. Epidemic strains of certain streptococci may be demonstrated and their source determined and thus the epidemics controlled; for example, septic sore throat and scarlet fever. Progress in absorption agglutination tests has been made and the identification of carriers of special strains, though as yet unsatisfactory, may be accomplished in the future. Much has been learned about the poisonous products of streptococci in man and lower animals through intradermal tests. Evidently endotoxins and exotoxins exist the production of which by the individual strains may vary from time to time and under different conditions. Many strains, however, are fairly stable and constant in their reactions. The recognition of the rôle of a possible allergic state, especially in the "rheumatic state," while at present of no practical significance, may lead to further important experiments in desensitization.

The introduction to this volume is written by Dr. William H. Park, and a bibliography of twenty-seven pages containing many hundred references is given at the close. This contribution, together with the recent monograph of Andrewes and Christie and the exhaustive volumes of the Thompsons, should serve as a stimulus to further work in this important field.

Maladies de l'intestin. Série II: Diverticules, mégacolon, dysenterie, colites infantiles, diagnostic de l'appendicite chronique, tuberculose, cancer, traitement bismuthé dans les affections gastrointestinales. Par R. Bensaude, médecin de l'Hôpital Saint-Antoine. Avec la collaboration de A. Cain et M. Lelong, médecins des hôpitaux, et al. Paper. Price, 70 francs. Pp. 495, with 156 illustrations. Paris: Masson & Cie, 1932.

This excellent volume is the second of a projected series dealing with diseases of the intestine. Although several co-authors have contributed to the work, it is noteworthy that Bensaude himself has written by far the greater portion. The first chapter deals with diverticulum of the duodenum, including a copious bibliography. Diverticula of the colon are then considered, and emphasis is placed on the point that the complications are more important than the parent disease. Considerable space is devoted to Hirschsprung's disease and its diagnosis by aid of roentgenoscopy and endoscopy. A chapter is devoted to pain in the right lower quadrant of the abdomen. The author takes a middle position in treatment, called by him the "opportunist attitude" in contrast to the "interventionist" on one side and "abstentionist" on the other. Sound advice is given on surgical management in such cases. Chronic amebiasis, tuberculous ulceration and malignant conditions of the bowel are discussed in some detail. The concluding chapter is devoted to the use of bismuth subnitrate in disease of the gastro-intestinal tract. It is the opinion of the author that large doses, from 15 to 20 Gm. a day, should be used. The danger of toxicity is negligible. The book is of value because it represents the attitude of one who has wide experience in his field and because the material is arranged for the clinician in everyday practice.

Bailey's Text-Book of Histology. Revised by Adolph Elwyn, A.M., Assistant Professor of Neurology, and Oliver S. Strong, A.M., Ph.D., Professor of Neurology. With the collaboration of Philip E. Smith, M.S., Ph.D., Professor of Anatomy, Aura E. Severinghaus, A.M., Ph.D., Assistant Professor of Anatomy, Wilfred M. Copenhaver, Ph.D., Assistant Professor of Anatomy, Russell L. Carpenter, Ph.D., Associate in Anatomy, and Charles M. Goss, A.B., M.D., Assistant Professor of Anatomy, College of Physicians and Surgeons, Columbia University. Eighth edition. Cloth. Price, $5.50. Pp. 746, with 529 illustrations. Baltimore: William Wood & Company, 1932.

This work is being modernized by shifting of the emphasis from the details necessary for the identification of organs histologically to the details of cytology and histophysiology. The discussion of the nervous system remains a prominent feature but is no longer the only one. It has been changed chiefly in the elimination of the strictly neurologic matter dealing with fiber tracts and nuclei; this is to be published separately. The section on histologic technic has also been dropped so that much new material could be added and the book nevertheless reduced in size by nearly 200 pages. There are new chapters on the cell, which include a stimulating survey of the methods of studying living and surviving cells; viz., tissue culture, vital staining and microdissection. The chapter on the endocrines presents a vast improvement over the treatment in previous editions. The beginner will appreciate its physiologic summaries. Such sections are examples of erudition tempered by discretion and experience in teaching elementary students. Others, such as the section on the sense organs, are in the old stereotyped manner. Some have simply been modified here and there with the attendant mistakes and ambiguities. Old errors, such as the arteriolae rectae verae of the kidney, remain together with many hackneyed semi-diagrammatic illustrations, particularly in the chapters on the urogenital system. Some new figures are poorly chosen; thus, the only adequate illustration of a vein is from an aberrant type. Printing and make-up are good but there are some obvious typographic errors.

Laboratory Service and the General Practitioner: An Interpretation of Pathological Aids to Diagnosis. By Arnold Renshaw, M.D., B.S., D.P.H., Director of the Laboratory of Applied Pathology and Preventive Medicine, Manchester. With an Introduction by Dan McKenzie, M.D., F.R.C.S.E. Cloth. Price, $2.50. Pp. 267, with 8 illustrations. New York & London: Oxford University Press, 1932.

A number of concise textbooks on laboratory diagnosis have appeared in the past few years in response to a demand by the profession. This book has been written with the purpose of informing the practitioner of medicine as to the conditions in which a pathologic laboratory can be of service to him. The author does not attempt to give the precise laboratory technic of each examination. For this purpose the reader is referred to more comprehensive textbooks. Though the organization of the book is essentially clinical and its method of presentation is practical it lacks the critical evaluation of the works discussed; this must be considered a serious omission, for the author has not completely fulfilled his intended purpose to the reader. In the discussion of the differentiation of infection with bovine and human strains of tubercle bacilli, he advocates the tuberculin test. Recent studies have shown that this is of little aid. Another common error frequently found in books on laboratory diagnosis is the statement that the peroxidase reaction is of value for the differentiation of myeloblasts and lymphoblasts. Very young cells of the myeloid series are oxidase negative. The use of serum calcium estimations in cases of imperfect coagulation also is questioned. The text, however, is well organized and shows a sincere effort on the part of the author to present a comprehensive treatise. In general, practitioners of medicine will find this book of value in aiding them to select those laboratory tests which have the maximum application for the study of a particular disease.

Foundations of Abnormal Psychology. By Fred A. Moss, Ph.D., M.D., Professor of Psychology, George Washington University, and Thelma Hunt, Ph.D., Assistant Professor of Psychology, George Washington University. Cloth. Price, $4.50. Pp. 548, with illustrations. New York: Prentice-Hall, Inc., 1932.

In the preface is the statement "This book is written from the point of view that places psychology in the group of the natural sciences, leaving out the metaphysical and speculative materials." On page 18, "It is a thesis of this book that so-called 'mental' factors do not cause disease (either physical or mental) except through their physiological effects." On page 21, "Mental disorders are to be defined just as other diseases are defined, as pathological conditions resulting from certain bodily disturbances." On the same page the authors classify mental disorders into two groups "(1) those of which the cause and pathology are known; and (2) those about which nothing is known in regard to the underlying causes." On page 52, "The modern psychiatrist talks a great deal, and knows very little, about sex." These are fair samples of the qualities of this volume. Written from an unproved assumption as a starting point, it comfortably relegates to "bad habits" all mental disturbances outside the well known organic reaction types and a few others which the authors feel sure will be proved organic. It gives as physiologic (!) causes eight items "without which mental disorders do not develop." These are bacterial infections, toxins, glandular disturbances, deficiencies in cell nutrients, deficiencies in nerve cells, tissue deterioration of old age, mechanical injury, and temperature disturbance. The authors admit that emotional factors may "cause definite organic changes sufficient to offer a physiological basis for disorder" but stubbornly refuse to give such emotional factors priority. Amnesia cases "are usually the result of rather sudden injuries to the nervous system." A catatonic person "becomes enraged and breaks up things, or may do himself or others bodily harm. He seems totally devoid of emotions."

One group of dementia praecox is attributed to focal infection and curable, but a few pages later it is stated that the infection and exhaustion psychoses can be differentiated from dementia praecox only by waiting for the mental symptoms to clear up when the infection is removed. There is no mention of preventing suicide in the paragraph on the treatment of manic-depressive insanity. In view of these points and numerous others, the frequent advice of the authors as to how to solve the problems of mental disorder is unwelcome. The book is neither a good textbook of abnormal psychology nor a safe introduction to psychiatry. Many quotations from Shakespeare, Lucretius, Francis Bacon and Edgar Lee Masters are interesting.

Veröffentlichungen aus der Gewerbe- und Konstitutionspathologie. Herausgegeben von L. Aschoff, M. B. Schmidt, M. Borst und L. Pick. Geleitet von W. Koch. Heft 33. Band VIII, Heft 1: Experimentelle Untersuchungen zur Histopathologie elektrischer Hautschädigungen durch niedergespannten Gleich- und Wechselstrom. Von Priv.-Doz. Dr. G. Schrader, 1. Assistent am Institut für gerichtliche und soziale Medizin der Universität Bonn. Paper. Price, 6 marks. Pp. 72, with 27 illustrations. Jena: Gustav Fischer, 1932.

This valuable monograph deals with the effects on the skin of low tension direct and alternating electric currents. A short statistical review of the subject is given under the heading of the importance of electropathology to medical jurisprudence and in relation to industrial accidents. Jellinek has asserted that the injury produced by an electric current is characteristic and diagnostic. Others dispute this. Schrader, by a careful study of such injuries produced experimentally, attempts to settle the question. His third chapter takes up the literature of the subject in detail respecting each of the seven subdivisions of Jellinek: the electric current injury or mark, the electrical or lightning figures, electrotraumatic wounds, electrolytic changes, electrical metallization, electrical burns and mixed forms. Distant effects on the tissues are considered concisely and clearly. In the fourth chapter Schrader states his particular problem and his method of approach, discussing first the anatomic peculiarities of the skin of the guinea-pig and the rabbit's ear, because these were used in the work. The injuries caused by direct and alternating current and by heat are studied by histopathologic and histochemical methods. Then the vital changes taking place in the rabbit's ear following each of these injuries are studied. The results are presented in an admirably clear and concise manner, illustrated by excellent pictures. The fifth chapter discusses the effect of these observations on questions of medical jurisprudence and industrial pathology, and the conclusions are set forth in the next and final chapter. A complete bibliography is appended. This monograph should be read by all who are interested in the use of electrical apparatus or in the medical or medicolegal aspect of the injuries produced by electricity.

Let's Operate. By Roy H. McKay, M.D., F.A.C.S., and Norman Beasley. Cloth. Price, $3. Pp. 361. New York: Ray Long & Richard R. Smith, Inc., 1932.

It is simple, indeed, for any medical author to exploit the mistakes of his confrères and to exaggerate the evidence of unnecessary operations, fee splitting and other weaknesses that have on occasion been apparent in medical practice. This volume is apparently a journalistic *tour de force*. Dr. McKay got important newspaper publicity when he first emphasized these facts and was apparently induced by the publishers to expand his original remarks into a book. This review is written some months after the book was first published, and the indications seem to be that as a sensation the book fell somewhat flat.

Roundabout Harley Street: The Story of Some Famous Streets. By Cyril Phillips Bryan, M.B., B.Ch., &c. Cloth. Price, 5s. Pp. 260. London: John Bale, Sons & Danielson, Ltd., 1932.

Here is an excellent account of the medical quarter of London. It concerns not only Harley Street but all the streets round about. It has a fine historical background and brings into the picture not only the famous physicians but also the Brownings, Dickens, Conan Doyle, Lord Byron, Wellington and many others. The book is extremely interesting, has been well written, and will afford a pleasant few hours to every physician who has more than a merely scientific interest in his profession.

Pathologie und Klinik in Einzeldarstellungen. Herausgegeben von L. Aschoff, H. Elias, H. Eppinger, C. Sternberg und K. F. Wenckebach. Band IV: Thrombose; ihre Grundlagen und ihre Bedeutung. Von Professor Dr. A. Dietrich, Direktor des Pathologischen Instituts der Universität Tübingen. Paper. Price, 8.80 marks. Pp. 102, with 26 illustrations. Berlin: Julius Springer, 1932.

The recent reports from numerous continental European clinics on an increase in the frequency of cases of thrombosis and embolism have renewed the interest in this important field of pathology. In a short and well written monograph, Dietrich, who with his associates has furnished valuable experimental and morphologic contributions to the problem of thrombosis, gives a review of the different factors involved in the formation of a thrombus. Coarse alterations of the vessel wall, changes in the condition of the blood and interference with the circulation are not sufficient to account for the different types of thrombi. They are factors that may be present or not and their extent in a given case is subject to great variations. Dietrich attributes particular significance to changes in the physiologic relations between the wall of the blood vessel and the blood. These changes manifest themselves morphologically in a swelling and activation of the endothelium and in the formation of deposits from the blood on the surface of the endothelium. When increased tendency of the blood to coagulate or slowing of the circulation is added to the local changes of the vascular endothelium, a thrombus results. The changes of the endothelium that lead to the thrombus formation can be studied in sensitized animals. Reinjecting the antigen brings about the characteristic endothelial reactions.

The rôle of infection varies. Thrombi may be formed locally near the site of the infection. The bacteria stick to the irritated endothelium of an adjacent vein into which they have been brought with the blood stream. It often takes careful dissection to trace a thrombus in a vein to the point of its origin. The second possibility is the generalized activation of the vascular endothelium from a focus of infection with thrombus formation distant from this focus in places where local conditions favor the coagulation of the blood.

While local thrombosis can be considered as a favorable reaction, progressing and recurrent thrombosis leads to "thrombus disease." Sudden changes in the relations between the blood vessels and their content produce massive coagulates of the blood, which are apt to become mobilized and to cause embolism. Embolism is the most serious complication of thrombosis. In 53.1 per cent of his cases of thrombosis, Dietrich encountered lung embolism, which in 35.3 per cent proved to be fatal. Dietrich states that when two thirds of the pulmonary circulation is eliminated, death results; but with preexistent pathologic changes in the lung, the extent of embolization necessary to cause death may be much smaller. Crossed or paradoxical embolism is quite common, while retrograde embolism is of no practical significance. With regard to the increased frequency of thrombosis and embolism the author is skeptical. Statistical studies are subjected to too many errors to allow definite conclusions. In summary, infections are of much greater importance in causing thrombosis than are circulatory or myocardial failures. Attached to the discussion of the subject is a long list of references, which are restricted to the German literature.

Prospecting for Heaven: Some Conversations About Science and the Good Life. By Edwin R. Embree. Cloth. Price, $1.75. Pp. 185. New York: Viking Press, 1932.

This volume includes a series of imaginary conversations between its author and a number of active minded thinkers. Through the text moves the Chinese philosopher Wu Ting, an imaginary individual who helps to smooth the discussions and to add both a philosophical and a humorous tone. Among the persons who enter into these discussions are C. M. Hincks, psychiatrist; Victor G. Heiser, sanitarian; Charles H. Judd, psychologist; Franz Alexander, psychoanalyst; Howard W. Odum, known for his work in social science, and Margaret Sargent. Among the topics discussed are particularly questions of sanitation and mental hygiene. Professor Alexander recites the story of the development of psychoanalysis. Mr. Embree seems to have been able to present, thus, in a most easily readable form, the points of view of these leaders of thought. The conclusion of the volume is that well recognized aphorism that each man makes most of his own hell or heaven.

Lehrbuch der klinischen Untersuchungsmethoden für Studierende und praktische Ärzte. Von Prof. Dr. H. Sahli. Band III. Seventh edition. Paper. Price, 52 marks. Pp. 776, with 259 illustrations. Leipzig & Vienna: Franz Deuticke, 1932.

The third volume of the series by Sahli on clinical methods covers a variety of subjects. It opens with a treatment of the methods of investigating the mouth and upper respiratory passages. Esophagoscopy, laryngoscopy and tracheoscopy receive adequate consideration, but bronchoscopy and ophthalmoscopy are briefly discussed. The examination of the esophagus and discussion of the clinical conditions that involve the esophagus are given considerable attention. A well written chapter on examination of fluids and material obtained by needle puncture follows. The presentation of this aspect of clinical examination is quite full and is well done. The major portion of the book deals with the subject of neurologic examination. The author makes a plea that neurologic examination be not treated in a stepmotherly fashion, and that it be not separated from the general medical clinic as a thing apart. He emphasizes the important interrelationships of neurology to general medicine. Comparable in the same manner as the nervous system is the integrating organic structure of the entire organism. In his treatment of the various neurologic problems he constantly correlates theory with practice, so that physiologic and pathologic considerations are at all times intimately bound with presentation of methodological detail. There is an excellent general consideration of neurologic phenomena, dealing with problems of disturbance in consciousness, motor disturbances, sensation, testing of reflexes, trophic changes, vasomotor and secretory abnormalities, occurrence of edema in nervous disease, and a full discussion of electrodiagnosis including a moderately detailed discussion of chronaxia. This section includes the discussion of lumbar, suboccipital, cisternal and ventricular puncture, roentgen investigation and encephalography. The special part presents excellently and at some length a systematic discussion of investigation of the cerebral nerves and of hemiplegia, monoplegia, aphasia, apraxia and agnosia. The physiology and symptomatology of the different levels and parts of the nervous system are treated with no apparent omissions. Focal symptomatology of brain tumors is completely discussed. Then follows a discussion of the spinal cord, the peripheral spinal nerves and the sympathetic and parasympathetic systems. Striatal conditions receive a special chapter. A short chapter on so-called general neurosis (nervosity, neurasthenia and hysteria) is included. The author's treatment of the latter subject is nonfreudian. Diagrams and pictures are included where they add to the understanding of the abnormal processes underlying the clinical phenomena. All in all, this is an excellent discussion in clinical investigation of the nervous system but is lacking in sufficient detail for the clinical investigation of other systems.

The Torch of Life: A Key to Sex Harmony. By Frederick M. Rossiter, B.S., M.D., Licentiate, Royal College of Physicians, London. Cloth. Price, $2.50. Pp. 214. New York: Aventine Corporation, 1932.

This is another of the volumes developed recently as a guide to the newly married in the technic of sex performances. The author has attempted to treat the subject with delicacy, but in his desire to make beautiful a matter that is essentially anatomic and physiologic he waxes lyrical. He gives accurate descriptions of the sex organs and pictures the love drama as a performance in which the male is primarily responsible for successful consummation. He discusses as usual the various postures and regions of excitation. The concluding chapters deal with the first night and various esthetic relationships. The book seems to be as good as any of those that have recently been made available for the purpose and not a great deal better.

The How and Why of Life. By Emma Wheat Gillmore, M.D. Cloth. Price, $2. Pp. 196, with illustrations. New York: Liveright, Inc., 1932.

This is another volume planned to enlighten the young on the nature of procreation and sex. It begins in the zoo and passes through all the animal species, including insects and the algae. The author says little indeed about the sex process in man. The book ends with a chapter preaching self control. The book is well done, is illustrated, and forms an excellent introduction to the subject of sex for boys and girls of high school age.

Miscellany

THE PRICE OF RADIUM

In an editorial entitled "Radium in the United States," THE JOURNAL, Nov. 5, 1932, stated that there is a need for more and less expensive radium, especially for the treatment of cancer. Radium-containing ores have been found in about nine countries, but only two countries are producing significant quantities of radium salts. Mr. F. C. Schmelkes offers an explanation for this situation by pointing out that there is at present a radium monopoly which controls the amount of production of radium salts. To support this statement, he cites editorials published in *Industrial and Engineering Chemistry*, July 1, 1929, and Nov. 1, 1931, parts of which are as follows:

THE RADIUM MONOPOLY

"Monopolies are not necessarily detrimental to the public interest. It is only when undue advantage is taken of the situation created by them that there is cause for complaint. One indication that a monopoly exists is to be found in the maintenance of artificial prices, which has frequently been accomplished by the rigid control of production. An example is found in diamonds, which would sell for but a fraction of their market price if the mines were really worked to capacity and the product placed in the channels of trade. By curtailing the quantity of stones reaching the retailer, there has been created and maintained not only an artificial price for the cut diamond but, curiously enough, an entirely unjustified feeling on the part of many that diamonds constitute a safe investment. The losses taken by those who have tried to sell an occasional fine stone prove the contrary. It matters very little to the well being of the people whether those who control the diamond situation dictate that the stones shall be sold at ten dollars or ten hundred dollars per carat. . . .

"The radium situation is a very different matter. . . . There is a considerable body of authoritative opinion to the effect that radium, when used skilfully and in sufficient quantity, still offers the best means known for the treatment of certain types of cancer, to mention but one important application relating to the maintenance of health and the defeat of disease. . . .

"Among those prominently identified with the study and production of radium is R. B. Moore, now dean of science at Purdue University. We quote a recent letter from Dr. Moore:

"'Up to 1912 the United States bought such radium as it needed from Europe. After that date, thanks to the efforts of the United States Bureau of Mines, the Standard Chemical Company, and later on other companies, this country became the largest producer of radium salts in the world. . . . The discovery and development of rich uranium deposits in the Belgian Congo finally made it impossible for our American plants to compete, and they have all been shut down for a number of years. The world supply of radium is produced in Belgium by the Union Minière du Haut Katanga. . . .

"'When radium was made from 2 per cent ore it sold for about $110,000 per gram of element. At the present time, made from 40 per cent ore, it was selling in retail quantities for $70,000 per gram. The wholesale price in large quantities purchased direct from the Belgian company is from $50,000 to $60,000 per gram.

"'The production of the radium company has been naturally only large enough to take care of the demand. When the writer was in Europe last summer there were about 400 tons of 40 per cent ore ready for treatment in Belgium. This would give, allowing an 80 per cent extraction, 33 grams of radium element. Ore of 15 to 20 per cent U_3O_8 is not treated by the Belgium company and is left in Africa. There is a very considerable amount of this ore available.

"'The actual costs of the company for producing radium are not known, but it should be very easy to obtain this rare element from 40 per cent ore for about $10,000 per gram, exclusive of mining costs and overhead.

"'Meanwhile, thousands of cancer patients are dying every year who do not have an opportunity of being treated by radium, which, at the present time, is the only successful treatment for cancer outside of an operation. A larger production and a much wider distribution would mean an additional number of lives saved. . . .'

"We are further informed that the plant of the Union Minière du Haut Katanga in Belgium, after having produced an amount of radium rumored at one hundred grams in excess of the market demand at the time, closed and was not reopened for operations until the stock of radium salts on hand had been taken at the prices established by the company. While the belief that the Belgian Congo contains great quantities of ore from which radium can be extracted and that these deposits are now hidden in order to maintain high prices may be erroneous, nevertheless it is known that the one or two outside men who have been permitted to visit the mines did so only after making solemn promises to maintain secrecy. We are informed by one who visited the plant in the early days that the cost at that time was not over five thousand dollars per gram of radium. While the ore then shipped was probably richer than that which goes to the plant today, it is nevertheless a simple matter to concentrate uranium oxide ore to any richness desired, water being available as it is in Katanga.

"The manufacturers and producers of a luxury may ask a price which returns an unreasonable profit and no one complains seriously, for we can dispense with luxuries. A hoarder of food who endeavors to extract a fabulous profit for a necessity would be given no mercy. What shall be said, then, of a company which, though numbering among its stockholders citizens of other lands, is nevertheless controlled by those identified with a country which sought and was given the help of the world, and which now demands the utmost the traffic will bear for a material which to many means the difference between life and death? It is not a pleasing picture. There has been no great outlay of time and treasure involved in the location of a deposit which some lucky circumstance placed on Belgian-controlled territory, nor has the company been required to perform tedious and time-consuming research in the development of a reduction method. Neither has it been found necessary to seek a market for a new product. That a reasonable profit is deserved by those who conduct commercial enterprises, whether they manufacture medicines or machinery, is accepted. It is when a life-giving element is maintained artificially at a price which limits its availability to suffering mankind that we raise our voice in protest."

WILL CANADA BREAK THE RADIUM MONOPOLY?

"Discoveries made this past summer in remote regions of Canada have disclosed deposits of pitchblende to which we may confidently look for supplies of radium sufficient to break the Belgian monopoly.

"On several occasions we have commented on the extreme richness of South African ore, the working of which has enabled the production of salts of radium at costs so much below those heretofore possible elsewhere as to give the Belgian company owning these resources a world monopoly in a substance far more important therapeutically than it is ever likely to become industrially. While the company in question has been most secretive as to the extent of its deposits, the richness of its ores, and of course the cost of winning radium from them, enough is known to render our belief unalterable that, had a different policy been adopted, there would be today nothing like the number of skilful physicians and surgeons estopped, by the lack of sufficient salts of radium, from accomplishing the utmost against one of the most dreaded diseases of mankind. Rather than be content with a fair profit on its operations, the Belgian company has seemed to prefer a policy which is copied from that pursued in the diamond market, where prices are maintained at a fictitiously high level by the simple process of controlling production. This results in prices unnecessarily high, but rich ore resources constitute a threat to those working with poorer ores and they could not possibly attain a cost sufficiently low to permit them to remain in competitive production.

"Now, in Canada, according to the report of Hugh S. Spence, Department of Mines, Ottawa, there have been found at LaBine Point, in the Great Bear Lake region, very important deposits of pitchblende, occurring in several extensive veins, some of which run deep at points where pits have been sunk. Ore, which may be expected to yield several thousand tons of high-grade pitchblende as well as a lesser amount of milling ore, has already been found in two veins. Some of the deposits run under small lakes, and underground explorations of these and other veins will probably materially increase the amounts now estimated as occurring in this region. More than that, during the past summer 20 tons of pitchblende running between 40 and 50 per cent uranium oxide were taken by airplane to the railhead and an additional 20 tons have been mined and are ready to be transported. So far as we are aware this is the first time ore in such considerable quantities has been moved by airplane. While the cost of such transportation is high, the values easily justify the expenditure, pending the time when concentrating mills will be located on the property. The 20 tons that have been brought out will yield from 2 to 2.5 grams of radium.

"The richness of this ore, together with the low cost of mining it, indicate that here, at last, is a deposit well able to match itself against those in South Africa. The men who own it and who have formed a company for its exploitation fortunately are primarily interested in the humanitarian uses of radium, though naturally entitled to a fair return for their several years of prospecting, labor, and monetary investment. . . .

"It is to be devoutly hoped that, as a result of this discovery, supplies of radium may soon be made available, within their ability to purchase, to the number of highly trained men who are skilled in its use and capable of applying it for the alleviation of human suffering."

Medicolegal

Death After Administration of Local Anesthetic

(Johnson v. Arndt (Minn.), 243 N. W. 67)

The defendant, a licensed physician, undertook to perform two tonsillectomies, one immediately following the other. To each patient he administered a local anesthetic, nupercaine,[1] by injection into the tissues surrounding the tonsils. One patient died in the operator's chair. The other died soon after the operation. The physician issued death certificates for both patients, assigning the cause of death in one case as "heart failure," with myocarditis as a contributing cause, and in the other case as "acute dilatation of the heart," with myocarditis as a contributing cause. The reported decision does not show the concentration or the quantity in which the drug was used, nor disclose any evidence of any official investigation into the causes of these deaths.

The husband of one of the deceased patients, as administrator of her estate, sued the physician on account of her death, alleging negligence by the physician. Judgment was rendered against the physician and he appealed to the Supreme Court of Minnesota.

The defendant physician testified that there was no negligence nor want of care on his part. He obtained the anesthetic, an imported preparation, from well known chemists and manufacturers of drugs in New York City. He had used the same preparation in other cases during a period of about nine months immediately preceding the death complained of in this case. The proper amount of drug was used, according to his testimony. There was no mishap, nor anything out of the ordinary in the course of the operation. There was no excessive bleeding then or afterward. In his opinion a blood clot, forming somewhere and clogging the circulation, caused the death of the plaintiff's wife. The death of the other patient who died on the same day was due, in the opinion of the defendant, to her supersensitiveness to the anesthetic, which could not have

1. "Nupercaine is a local anesthetic, acting like cocaine when applied to mucous surfaces and like procaine or cocaine when injected, the action being relatively prolonged. Nupercaine is about five times as toxic as cocaine when it is injected intravenously into animals, . . . Death has been reported after the subcutaneous injection of 135 cc. of a solution of 1 in 1,000."—New and Nonofficial Remedies, 1932, p. 48.

been ascertained by any prior examination, however careful or complete.

The plaintiff, the Supreme Court pointed out, failed to meet this testimony of the defendant by any direct or opinion evidence. He presented no physicians as witnesses and no medical evidence, expert or otherwise. The most he did was to point out certain circumstances and certain statements alleged to have been made to others by the defendant and by the nurse who was present at the operation. The defendant was alleged to have told the plaintiff's witnesses that he did not know what caused the death and to have stated at another time that "it was like a game of cards, and he played the wrong card." The evidence showed that the defendant undertook to perform a tonsillectomy on another patient either immediately before or immediately after the operation on the patient whose death formed the basis of the present suit, and that that patient died while in the operator's chair. The defendant made no examination of any kind of the bodies of his two dead patients. After examining the containers from which the anesthetic was taken, he threw them away.

No evidence was offered, said the Supreme Court, to show that the defendant injected into the throat of his deceased patient an excessive amount of the anesthetic or any other poison. The fact that the patient died from or immediately after an operation is not sufficient to charge a physician with negligence. In this case, however, it was asked, on behalf of the plaintiff, substantially that the jury be permitted to infer first that the defendant had done something which he was not shown to have done, and then to base on that inference the further inference that what the defendant was inferred to have done caused the death of the deceased. Inferences may not safely be carried that far.

The rule of res ipsa loquitur does not apply under circumstances such as those in the present case. It has been applied in some malpractice cases, but only when there was direct evidence as to the cause of the injury, as for instance failure to remove all of an afterbirth, or a roentgen burn following the making of a roentgenogram. In the present case, there was no such evidence. If there had been evidence to show that the defendant had used an excessive amount of an anesthetic or other dangerous poison, the jury could well have found that he was negligent and then have inferred and found that his negligence caused the death, but the foundation for a finding of negligence was wanting.

The judgment of the trial court was therefore reversed. There seemed to be, however, some probability that evidence might be available to throw further light on the case, and the Supreme Court therefore refrained from granting judgment for the defendant physician.

In concurring decisions, two of the judges suggested that from the evidence in the case the jury could have concluded that the patient whose death forms the basis of the present suit was the second of the two patients operated on; that the fatal result in the first case was known to the defendant before he proceeded to operate on the second patient, and that therefore it was negligence for him, without the precaution of an investigation into the cause of the first death, to use on the second patient the same anesthetic that had apparently proved fatal to the first.

Dental Practice Acts: Unlicensed Practice.—The defendant was prosecuted for practicing dentistry without a license. A witness, who apparently was an investigator for the board of registration and examination in dentistry, testified that on several occasions the defendant took impressions of his gums, made impressions in wax or a rubber compound and in plaster of paris, made dentures and fitted false teeth in his mouth. This evidence was uncontradicted. The trial judge found that the defendant had acted on "the pleading of the witness" and dismissed the complaint. The board then appealed to the supreme court of New Jersey. The dismissal of the complaint, said the supreme court, was not justified. Uncontradicted evidence was adduced to the effect that acts had been done which constituted the practice of dentistry within the meaning of the dental practice act. The defendant himself testified that the work which he did was of a character which should have been done by a dentist. The case was remanded to the lower court for a retrial.—*State Board of Registration and Examination in Dentistry v. Karas (N. J.), 160 A. 889.*

Society Proceedings

COMING MEETINGS

American Orthopsychiatric Association, New York, February 23-25. Dr. George S. Stevenson, 450 Seventh Avenue, New York, Secretary.
Annual Congress on Medical Education, Medical Licensure and Hospitals, Chicago, February 13-14. Dr. W. D. Cutter, Council on Medical Education and Hospitals, 535 North Dearborn St., Chicago, Secretary.
New York, Medical Society of the State of, New York, April 3-5. Dr. Daniel S. Dougherty, 2 East 103d Street, New York, Secretary.
Pacific Coast Surgical Association, Del Monte, Calif., February 23-25, Dr. Edgar L. Gilcreest, 384 Post Street, San Francisco, Secretary.
Southeastern Surgical Congress, Atlanta, Ga., March 6-8. Dr. B. T. Beasley, 45 Edgewood Avenue, Atlanta, Secretary.

SOUTHERN SURGICAL ASSOCIATION

Forty-Fifth Annual Session, held at Miami, Fla., Dec. 13-15, 1932

The President, DR. ROBERT S. CATHCART, Charleston, S. C., in the Chair

Ureteral Calculi

DR. GEORGE R. LIVERMORE, Memphis, Tenn.: Stasis and infection play leading rôles in the formation of ureteral calculi, but that stricture of the ureter is the sole cause is a statement that most physicians are unwilling to accept. The old idea of a nucleus or nidus being necessary for the formation of a calculus, such as a foreign body, a blood clot, a clump of pus, or bacteria still holds true, and the colloidal theory fits in with it, as its advocates assert that, when the colloids of the urine coagulate, they no longer hold the crystalline matter in solution but themselves in the coagulated state form a network, on which the crystalline material is deposited. Intravenous urography is one of the newer aids in clearing up the diagnosis, especially in calculi that do not cast a shadow on the x-ray plate. Years ago I devised a ureteral stone dislodger and later a ureteral dilator, both of which have proved of great value in assisting patients to pass ureteral calculi. The method consists in first ascertaining the functional capacity of each kidney. If at the first attempt I am unable to pass a catheter beyond the stone in order to make a phenolsulphonphthalein test and the patient's condition justifies further instrumentation, I pass catheters, bougies and the Livermore dilator to the stone and, by thus dilating the ureter below the stone, hope to cause its passage. Frequently the stone will pass after one treatment. When the stone is adherent to the mucous membrane because of spicules or irregularities on the stone or is embedded in the mucosa, it may sometimes be freed. A warning must be given as to the danger of prolonged attempts at cystoscopic removal of ureteral calculi, for if persisted in when the kidney function is failing or when catheter drainage does not cause the prompt subsidence of rigors, and fever, or in that type in which a catheter or a bougie cannot be passed beyond the stone, there is grave danger of causing destruction of the kidney and perhaps the death of the patient. It is recognized that patients with chronic kidney infections, provided their kidney function is fairly good, withstand acute attacks much better than those who have their first acute attacks. Such chronic cases often mask the seriousness of the true condition of the patient by their lack of grave symptoms.

Operation for Undescended Testicle

DR. E. DUNBAR NEWELL, Chattanooga, Tenn.: In my early operations for undescended testicle I frequently ligated the spermatic vessels to lengthen the cord sufficiently to place the testicle in the scrotum without tension. Even today, if operating on an adult who had a normal testicle on the other side, I would not hesitate to ligate the spermatic vessels, if removal of the vaginal process of the peritoneum and the severing of the fascial bands did not give the necessary length to place the testicle in the bottom of the scrotum without tension. The Torek operation might obviate the necessity of cutting the spermatic vessels, but many patients I am sure would prefer the liability of an atrophied testicle in the scrotum to a two-stage Torek operation. The ideal operation has been for me the Bevan operation with some slight modification. The ideal time is before puberty, from 6 to 12 years of age. The goal is to free the vessels and the vas so completely that they are no longer covered or surrounded with peritoneum, peritoneal

bands or fascial bands, without injury to the vessels. I have found in doing hernia operations under local anesthesia that when the procaine hydrochloride is injected around the cord it makes the dissection of the vaginal process much easier with far less trauma to blood vessels. I utilize this principle in my dissection around the vessels and vas in my operations for undescended testicles. After the cord has been lengthened enough to remain in the bottom of the scrotum easily, a twenty-day number 2 chromic catgut ligature is passed on a straight needle through the gubernaculum testis and tied lightly. The two ends are then passed through the bottom of the scrotum one-half inch apart and tied to a rubber band, and the band is fastened with a little tension to a frame, or to the skin after the technic of Hugh Cabot. To me, this has been an ideal operation.

Cystectomy for Carcinoma of the Bladder

DR. ROBERT C. COFFEY, Portland, Ore.: In eleven cases, cystectomy for cancer of the bladder was done. Two women on whom the operation was done in two stages (first ureteral transplantation; second, cystectomy) are alive and well four years after the cystectomy. Two women with far advanced carcinoma of the bladder who had been treated on numerous occasions by radiation and fulguration died as a result of an attempt to do the combined operation at one sitting. It was bad judgment in both cases to do the operation that was done. The difficulties encountered in these two cases revealed special problems, which make the combined operation unpractical in women, even if the cases are favorable for operation. Seven men were operated on, six for primary carcinoma of the base of the bladder and one for primary carcinoma of the prostate. Of this number there was one surgical death, in no way connected with the kidneys. Necropsy showed that the cause of death was a septic heart condition. One patient died five and a half months after operation without the presence of a physician, and evidence obtained from the family was that death may have been due to something entirely foreign to the operation or to the disease. The other five men are alive and well. All have been seen or heard from within the last month. All have been examined within five months. I am now able to report seven symptomatically well patients with no evidence of recurrence in any case, four and a half years, three years four months, two years nine months, two years five months, two years four months, one year six months, and one year after operation.

Tumors of the Parathyroid Gland

DRS. FRED W. RANKIN and JAMES T. PRIESTLEY, Rochester, Minn.: Although no one has had extensive experience in surgery of the parathyroid bodies, certain general principles and factors of safety have become evident. Wide exposure of the region may be obtained through the ordinary approach to the thyroid gland. As these tumors are frequently bilateral, it is important to examine both sides before starting local resection on either side. If this precaution is neglected, one may remove a small adenoma on one side only to find a much larger one on the other side, removal of which might leave an inadequate supply of functioning parathyroid tissue. The main danger in removing these tumors arises from their customary situation close to the recurrent laryngeal nerve. Adequate exposure and the hemostasis secured by ligation of the inferior thyroid artery before removal of the tumor aid in accurate and careful dissection. Local anesthesia, supplemented if necessary with a little gas, affords sufficient analgesia and permits early recognition of trauma to the nerve. After operation, one should always be prepared to administer parathyroid extract and calcium if necessary to avert tetany, for this is not an uncommon temporary development following removal of a tumor, apparently indicating an evanescent disturbance of parathyroid function during the period of readjustment after resection. At present there seems to be insufficient evidence to warrant broadening the scope of surgery of the parathyroid glands to include such diversified maladies as osteomalacia, Paget's disease, rickets, chronic deforming arthritis and generalized myasthenia. Experimental investigation has failed to elicit any data, to our knowledge, which definitely suggests a direct etiologic relationship of these ailments to dysfunction or hyperfunction of the parathyroid bodies. On the other hand, the typical clinical picture presented by the cases here cited has been repeatedly reproduced by prolonged administration of parathyroid extract to the experimental animal. The general hygienic and dietary measures employed in the treatment of Paget's disease, osteomalacia and so on may be responsible for the improvement attributed by some authors to subtotal removal of the parathyroid glands, although the glands have been often reported normal to gross and microscopic inspection in these cases. We have seen similar temporary response in typical cases of hyperparathyroidism under medical treatment. Remissions are not uncommon; at least, to date no cases have been followed for a sufficient length of time to allow definite conclusions to be drawn regarding the efficacy of operations on the parathyroid glands in the absence of the characteristic chemical and skeletal changes indicative of the typical syndrome of hyperparathyroidism. Hunter, in England, who has had considerable experience with parathyroidism, is likewise of the opinion that cases of focal osteitis and osteomalacia are unrelated to generalized osteitis fibrosa cystica. The low level of blood calcium typically observed in osteomalacia, and also the frequency of spontaneous tetany are the antithesis of what is seen in hyperparathyroidism. Experimental clinical surgery of this type is not to be deprecated, however, when conducted by a scientific group of capable investigators, and it is to be hoped that the truth will soon be elicited.

Peripheral Nerve Symptoms in Goiter

DR. ALEXIUS MCGLANNAN, Baltimore: In a case of nodular goiter with hyperthyroidism, there were symptoms suggesting pressure on part of the brachial plexus. The patient, a middle aged white man, was admitted to Mercy Hospital under the care of Dr. M. C. Pincoffs, who made the diagnosis and referred him to me for operation. The symptoms of hyperthyroidism were not definite. There was some general loss of strength, coarse and fine tremor of the hands, quick speech and movements. The facial expression was a little drawn. The pulse rate varied from 90 to 120. The basal metabolic rate on three occasions was 39, 42, 44. The thyroid was deep set, the isthmus thick and firm. There was a hard, almond sized nodule in the right lobe. The left lobe was firm and situated deep in the neck. The patient complained of severe pain in the left arm and forearm in an area roughly that of the distribution of the internal cutaneous nerve. At operation the firm nodular thyroid was found tightly wedged in under the muscles. The left lobe extended outward and backward a considerable distance into the neck. The isthmus and the greater part of both lobes were removed. The patient made a good recovery. Immediately after the operation the pain in the left arm disappeared and four months later had not recurred. Apparently this pain was caused by pressure of the left lobe of the thyroid on the brachial plexus, which was relieved by the removal of the goiter; but disturbance of the cervical sympathetic may be a factor.

Intestinal Anastomosis, with a Description of a Simple Aseptic Technic

DR. W. D. GATCH, Indianapolis: In 1912 I published the results of an experimental study of aseptic anastomosis. The conclusion was stated that aseptic anastomosis is theoretically impossible but practically attainable. Cultures made from along the line of suture were sterile. Threads pulled through the intestinal walls just as they are used in suturing were found to be sterile in nearly all tests. The experiments demonstrated that the "contamination from the suture is so slight that the tissues are well able to cope with it." Prolonged clinical trial has now demonstrated the soundness of these results. I have found the methods reported in 1912 so satisfactory that I have decided to report them again with improvements which I have made. I advance the following claims for the technic employed: It is safe, easy to carry out and adaptable to every location where an intestinal suture is required, suture of the stomach excepted. Here, I do not consider any kind of aseptic suture safe because of the danger of hemorrhage. It does not require any instruments not in the possession of every surgeon. It makes possible primary healing of the abdominal wound in most cases after resection of the colon. This is a practical test for the efficiency of any aseptic technic. The completed anastomoses have practically the same sutures used in the best types of open operation, and

they are therefore just as secure and trustworthy as the latter. In clinical surgery I always use the lateral anastomosis, because I think it safer and because I have never observed any disturbance of intestinal function as a result of it. To secure the best possible functional result, the openings in the intestine should not be made over an inch and a half in length, and care should be taken to make the blind ends of intestine as short as possible. Bad function is more liable to result from too long an opening than from the blind ends. After observing the results of numerous end-to-end anastomoses, done on the experimental animal by every conceivable technic, I have been convinced that the operation is more dangerous than the lateral suture, and that in the small bowel it is actually more liable to give a bad functional result. I feel that the longer time required to make a lateral anastomosis is well spent.

Precolostomy for Inoperable Carcinoma of Rectum

DR. HARVEY B. STONE, Baltimore: It is not unusual, on exploring cases of cancer of the rectum and lower sigmoid, to discover an inoperable condition. Such cases always present the probability of obstruction. To meet this situation, the operation of precolostomy is advised. This is done at the time of the exploration and consists of bringing the sigmoid out through a small left McBurney incision and fixing it so that a small cone of intestine is left protruding but not opened. This intestine heals into the incision and is easily available for completion of the colostomy at any time when it may become necessary. No additional anesthetic or operative procedure is required. A tube is simply placed through an incision in the externalized cone of bowel. Should obstruction never develop during the remaining life period of the patient, the precolostomy is never completed and the patient escapes the distress of having a colostomy.

Treatment of Irreducible Prolapse of the Rectum

DR. MONT R. REID, Cincinnati; The first application of this method was in 1925 on a Chinese girl, aged 8, admitted to the Peiping Union Medical College Hospital with a sloughing prolapse of the rectum about 5 inches in length. The condition had been present a long time and it was obvious that no attempt should be made to reduce it. The external opening of the intestine was at the apex of the protruding mass. There was no evidence of intestinal obstruction. It was easy to insert a rubber tubing, about an inch in diameter, into the prolapsed rectum and to pass it through the sphincter well up into the rectum. With this tube thus placed, several of us palpated the prolapse surrounding it and were sure there was no herniation of intestine into a peritoneal pouch. At the junction of the skin with the mucosa the edema was less, and it was at this point that palpation was most satisfactory and convincing. Consequently the tube was anchored in situ by means of a couple of heavy silk sutures at the apex of the prolapse. Next a constricting rubber band was placed round the prolapse at the normal surface level of the anus and just distal to the external sphincter muscle. This band stopped the circulation to the prolapse and also occluded any peritoneal pouch that might have been present. For several hours the child was watched most carefully for evidences of intestinal obstruction. At the end of two weeks, during which time there was normal defecation and expulsion of gas through the tube, the entire prolapse sloughed away. A spontaneous anastomosis had occurred at the level of the rubber band. Tone quickly returned to the muscles and at the time of her discharge from the hospital there was good sphincter control and no evidences of rectal stricture. We believed that this procedure had definitely lessened the chances of peritonitis, which would have attended surgical amputation of the prolapse and suture in the presence of so much infection and necrosis. A similar procedure was employed on another patient in the same hospital and with as satisfactory result. In the clinic of the Cincinnati General Hospital there have been two other occasions when I felt that this method of treating an irreducible prolapse of the rectum was justified. In both instances the patients were adults and the prolapses had become irreducible and badly ulcerated at the time of their first appearance. There has not been an opportunity to follow the subsequent history of the Chinese patients. It has now been more than three years since we operated on the last of the two patients in our clinic in Cincinnati, and both of them have remained well. Sphincter control has remained good. There is no stricture.

Congenital Stenosis of the Cardia

DR. J. KNOX SIMPSON, Jacksonville, Fla.: A boy, the second child of healthy parents, was born in St. Vincent's Hospital, Feb. 17, 1928, with normal delivery. Our pediatrician, Dr. T. E. Buckman, was called to take charge of the feeding. As nearly as one could judge, there was never from birth any food or water that reached the stomach. Feedings would be swallowed and after a few moments vomited. The vomiting was rather forceful at times. The general physical examination of the child was negative. A roentgen examination was made in search for a persistent thymus or some other cause for the obstruction of the esophagus. The first films showed nothing except a shadow near the hilus of the left lung, which was thought to be an enlarged mediastinal gland. The baby was then given a barium mixture with a medicine dropper and a slight amount trickled through into the stomach, but the majority of it remained in the esophagus, churning about for an hour in spite of the administration of atropine. Finally the barium was vomited. Efforts were then made to pass catheters and bougies into the stomach through the esophagus, but this could not be accomplished. An impassable obstruction at the cardia was encountered, which would not give way with as much force as was thought wise to exert. Efforts to get the baby to swallow a thread as a guide to dilation were unsuccessful. A recheck with barium sulphate was made the next day and the same condition was found. The baby was becoming somewhat dehydrated, and nothing was passing the cardia. Two courses were discussed: One was an effort to get by the obstruction with an esophagoscope, and the other to do a gastrostomy and later plan the dilation of the cardia. The latter course was chosen as being the least dangerous to the life of the child, so on the third day of the child's life a gastrostomy was done. Under local anesthesia a number 16 catheter was introduced into the stomach and fixed in position. An exploration of the cardiac end of the stomach and of the diaphragmatic opening at the time of the gastrostomy showed nothing of note except some crescentic bands extending from the fundus of the stomach up to the under surface of the diaphragm, in the region of the cardia. Feeding through the tube was begun immediately, and the baby began to improve and to gain weight normally. In ten days the tube was removed, and with a Braasch cystoscope passed into the stomach, a stenosis in the region of the cardia was easily located. It appeared as a small dimple, about the size of a small ureteral meatus. A number 6 ureteral catheter was passed through it without difficulty. As it reached the posterior wall of the pharynx the baby gagged and the end was easily picked up with a hemostat and drawn out through the mouth. A silk fishing line was threaded through the end of the catheter with a needle and the catheter withdrawn. The ends of the thread were tied together, thus making a continuous thread, to which could be attached dilators. The tube was then replaced for feeding, the string coming out of the opening alongside the tube. The next day, dilation of the cardia was begun. This was done with a graduated set of Jackson dilators, made of flexible rubber, with a string through the center with a loop on each end. The dilators were tied to the end of the continuous thread and pulled through the gastrostomy opening and on through the cardia until size 24 was reached. They were then tied on above and introduced through the mouth and pulled through the cardia from below. Finally we made a hydrostatic dilator of small size by the use of glove fingers placed over the end of a rubber catheter. We used this, gaging the amount of dilatation by introducing a measured quantity of water into the catheter with a syringe. Dilation seemed to be somewhat difficult until we reached a size 24 dilator, after which time it was easy. None of the manipulations were accompanied by untoward reactions, and none seemed to give the baby much discomfort. Within three weeks the baby was taking a formula by mouth normally, and a recheck of the cardia showed no delay at this point. The gastrostomy tube was left in place for three weeks more, to make sure there was no return of the cardiac contraction, and was then removed. The gastrostomy wound was slow in closing, so three weeks later, under local anesthesia, the stomach was freed from the abdominal wall, the opening closed, and

the stomach dropped back into the abdomen. The wound was closed, healing taking place without incident. The baby since then has followed the usual feeding and growth of a normal child, and is now a big husky lad, nearly 5 years old. There have been no symptoms of any kind referable to the gastrointestinal tract since the patient was finally dismissed.

Adynamic Ileus

DRS. ALTON OCHSNER and I. M. GAGE, New Orleans: The causes of adynamic ileus may be intra-abdominal or extra-abdominal. The most frequent cause is exposure to air and manipulation during laparotomy. Adynamic ileus occurs earlier postoperatively than mechanical ileus. It is characterized by the absence of colicky, intermittent pain. Plain roentgenograms of the abdomen are of inestimable value in the diagnosis of all forms of ileus. The treatment of adynamic ileus varies according to the type. The prophylactic treatment consists of abandonment of preoperative and postoperative catharsis and the avoidance of unnecessary trauma and peritoneal contamination during the performance of a laparotomy. Physiologic ileus which occurs for varying periods of time following all laparotomies is treated by withholding the oral administration of all substances until nausea has ceased, by the application of heat to the abdomen, and by the administration of morphine. Water balance should be reestablished. Severe adynamic ileus is treated by transduodenal decompression by means of indwelling nasal catheters and remineralization of the patient. Hypertonic salt solutions ("hypertonic" Ringer's and "hypertonic" Hartmann's solutions) injected intravenously stimulate the intestinal movement. In severe cases one or more enterostomies are frequently necessary in order to decompress the dilated intestine. A splanchnic block (splanchnic or spinal analgesia) is often efficacious. Drugs are of little or no value.

Treatment of Cancer of Breast

DR. BURTON J. LEE, New York: Much of the statistical material as to end-results in the period up to 1915 had best be set aside as of little value in determining the present method of treatment. Unless the medical profession can reach a united conviction that early phases of mammary cancer are curable by radical surgery combined with irradiation, the whole effort in behalf of those suffering with cancer of the breast would seem futile. This paper is a report of the end-results in primary operable carcinoma of the breast at the Memorial Hospital, New York, treated by radical amputation combined with preoperative and postoperative irradiation. The number of patients reported is 217. Since the fall of 1919, when the Breast Clinic was established, the operations have been performed by myself and my colleagues. The general principles laid down by Halsted and Willy Meyer have been followed. Five, seven and ten year results have been tabulated and no case is reported in which operation was performed later than December, 1927. The weekly follow-up clinics carried on by each clinical department of the hospital offer an effective means of keeping touch with our patients. Five patients left the clinic before the expiration of the five year period and it has been impossible to trace them. This gives a follow-up figure of 98 per cent on 217 patients for a period of five years. A follow-up figure of 96 per cent was obtained in 130 patients followed for seven years, five of the cases being untraced. Two patients were lost track of in the ten year follow up on seventy-five patients, giving a follow-up figure of 97 per cent.

Palliation in Advanced Mammary Carcinoma

DR. WILLIAM PERRIN NICOLSON, Atlanta, Ga.: This paper calls attention to the large number of far advanced hopeless cases of mammary carcinoma and urges a more considerate attitude toward them. It is suggested that each case be considered as to probable duration of life, whether or not a slough is imminent, whether or not an immediate recurrence is likely, the radiosensitivity of the tumor, and the general condition of the patient. The cases are arbitrarily divided into five groups: Those in which nothing of benefit can be done but to administer narcotics; in this group fall the extensive recurrences and the very radioresistant tumors. Those who have the "inflammatory" type carcinomas and who are doomed to an early death, but who live about six months longer if treated by radiation alone. Those in which the primary tumor is operable but which have distant metastases, especially to bone; these are palliated with radiation. Those best treated by radiation—external and interstitial; in this group are the very radiosensitive tumors, especially those in persons not otherwise physically able to stand an operation. Those cases which are obviously hopeless so far as a "cure" is concerned but in which the patients would be made more comfortable if the breast was removed, chiefly by ridding them of a foul smelling, sloughing mass; this group is stressed more than the others because these are the patients most likely to be neglected. The comfort of the patient is to be the guide and not the "statistics." Much more good frequently is accomplished than is hoped for, and the patient can rarely be made less comfortable. One or more cases typifying each of these groups, from the Surgical Service of Steiner Cancer Clinic, Atlanta, was reported.

Cancer Clinics

DR. FRANKLIN H. MARTIN, Chicago: Through its Committee on the Treatment of Malignant Diseases, the American College of Surgeons in 1930 undertook to develop throughout the United States and Canada a series of cancer clinics in connection with approved general hospitals and other approved institutional clinics where cancer is specially treated. By this means we can extend to all interested groups the privilege that was enjoyed by the limited number of clinics with which the committee of the college has cooperated; and also we shall be enabled to compile more comprehensive records of cancer and cancer cures. The difficulties, ethics, finances and plans of this stupendous undertaking have been carefully considered. It is our desire to have the voluntary cooperation of participants and to safeguard the proposed cancer clinics by establishing standards under which they can be approved after personal surveys. There are 158 definitely organized cancer clinics, at least 100 of which merit full approval; 155 others have discussed the plan with our trained visitors, and most of these have shown facilities and either have started organization or show an inclination to do so. Our clinics have their problems: Through what means will the public learn of cancer clinics? If a clinic is organized to warrant approval of the college, this fact will be made known to the medical profession; the college, after a representative number of clinics have qualified, will release the information to the lay press, as is the custom with accepted hospitals, but the name of the clinic will be eliminated; the public will be directed through the same publicity to obtain facts about approved clinics from the family doctor, from approved hospitals, or from the officials of their respective county medical society. The American College of Surgeons in its sectional and clinical meetings will continue to inform the audiences that in their midst they possess diagnostic cancer clinics. The question "Where are these clinics?" will be answered by "Ask your family doctor."

Cardiac Decompensation Following Arteriovenous Fistula of Subclavian Vessels

DR. J. M. MASON, Birmingham, Ala.: In a previously healthy woman, an arteriovenous fistula in the first portion of the left subclavian vessels was diagnosed forty-eight hours after the infliction of a stab wound beneath the left clavicle. Locally, during the healing of the wound a thrill and bruit became marked and widespread. There was no complaint of severe pain, but the patient was much disturbed by the noise of the bruit and by a sensation of oppression in the chest. There was no tumor. Peripherally there were no varicosities, nor was there any edema of the extremity. The pulse in the involved side was weaker and the blood pressure was lower than on the sound side. There developed, within six weeks of the injury, every discomfort that could well take place from a decompensated heart; pleural and peritoneal effusions, enlargement of the liver, edema of lower extremities, cough, dyspnea, dilated heart, low blood pressure and weakened pulse. Following ligation of the subclavian artery in its first and third portions, and the subclavian internal jugular and left innominate veins, and excision of the included sections of these vessels together with the fistula, the signs of broken compensation have disappeared, the quality of the pulse has improved, and the blood pressure has risen to a more normal level. The patient has been able to resume her household duties. The heart, though well compensating, has sustained damage that will probably be permanent.

(To be continued)

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

Archives of Dermatology and Syphilology, Chicago

26: 783-960 (Nov.) 1932

*Arsphenamines as Factors in Production of Neurosyphilis. P. A. O'Leary and J. R. Rogin, Rochester, Minn.—p. 783.
*Fatalities Due to Bismuth in Treatment of Syphilis. H. Beerman, Philadelphia.—p. 797.
Grenz Rays: Their Therapeutic Value in Dermatology. M. Scholtz, Los Angeles.—p. 802.
Lichen Planus Bullosus: Report of Case. D. E. H. Cleveland, Vancouver, B. C., Canada.—p. 816.
*Spinal Fluid in Syphilis: II. Comparative Study of Five Hundred and Twenty-Two Spinal Fluids by Complement Fixation and Microscopic Slide Precipitation Tests: Preliminary Report. L. Spiegel, J. J. Eller and C. R. Rein, New York.—p. 819.
Syphilitic Bursopathy of Verneuil: Report of Case. N. N. Epstein and R. Friedlander, San Francisco.—p. 831.
Rhinophyma, with Unusual Involvement of Chin. W. M. Sams, Ann Arbor, Mich.—p. 834.
Benign Epidermal Neoplasms. S. W. Becker, Chicago.—p. 838.
Acrodermatitis Chronica Atrophicans: Preliminary Report. A. M. Davidson and P. G. Mar, Winnipeg, Canada.—p. 849.
*Multiple Benign Cystic Epithelioma (Epithelioma Adenoides Cysticum): Summary of Literature. F. Summerill and J. G. Hutton, Denver.—p. 854.
Granuloma Fissuratum. R. L. Sutton, Kansas City, Mo.—p. 865.
Lymphogranuloma Inguinale: Report of Three Cases from Chicago. L. Amtman and I. Pilot, Chicago.—p. 868.
Dermatitis Following Nerve Injury. Ruth Herrick, Grand Rapids, Mich.—p. 879.
Skin Metastases in Carcinoma of Bladder. H. C. Rolnick and C. P. O'Neill, Chicago.—p. 882.

Arsphenamine in Neurosyphilis.—O'Leary and Rogin studied 500 cases of neurosyphilis in an attempt to determine the influence of the modern treatment of syphilis on the production of neurosyphilis. In reviewing the literature they found many references to the relationship of modern treatment to this serious complication of the nervous system. They present an outline of the material of their study and an analysis of sex as a factor and history of early infection. Early in the infection, 72 per cent of the patients had not received treatment, 13 per cent had received only iodides or mercury in some form, 11.9 per cent had received inadequate treatment with one of the arsphenamines and mercury, and only 3 per cent had received what is now considered adequate treatment. The more serious type of involvement was much more common in the cases in which arsphenamine had not been given, as compared with cases in which inadequate or adequate arsphenamine treatment had been given. Of the fifteen patients who were adequately treated during the period of acute syphilis, 60 per cent manifested asymptomatic neurosyphilis. Adequate antisyphilitic treatment given after the diagnosis of neurosyphilis had been made proved efficient when its effects on the spinal fluid, blood and clinical symptoms are considered. This efficiency was equally manifest in cases in which previous treatment had not been given. That arsphenamine predisposes to, or induces the development of, neurosyphilis is not borne out by the author's study. In the 500 proved and unselected cases of neurosyphilis, arsphenamine had not been given in the early period of the infection in 85 per cent. The modern treatment of neurosyphilis is of pronounced value in reducing to a minimum the clinical, serologic and spinal fluid manifestations of the disease.

Bismuth Compounds in Treatment of Syphilis.—Beerman states that a survey of the literature on fatalities due to bismuth compounds in the treatment of syphilis reveals that intravenous injection is primarily responsible for sudden deaths, and that the deaths are preceded by the symptoms of colloidoclastic shock. The importance of pulling back on the plunger of the syringe to prevent unforeseen injection into a deep vein after the needle and syringe are in place before intramuscular injection is emphasized by the case of Chenoy. Delayed deaths due to bismuth intoxication are usually attributable to involvement of the gastro-intestinal tract, the liver or the kidneys, or a combination of two or more of these structures.

Spinal Fluid in Syphilis.—According to Spiegel and his associates, the examination of 522 spinal fluids from 317 patients shows definitely that the microscopic slide precipitation test is much more sensitive than the complement fixation test. In treated patients, positive slide precipitation tests are much more persistent than complement fixation tests. The results of the protein and slide precipitation tests correlate closer than do either of them with the complement fixation tests; they are also much more consistent on repetition. For prognosis and therapy, the protein tests are especially helpful. Cases of neurosyphilis in which intensive treatment is employed are closer to a clinical cure when protein and slide precipitation tests become negative than when less sensitive tests are used. In examining the spinal fluid, no single test should be considered diagnostic unless confirmed by at least one other properly selected test, or by reexamination of the spinal fluid. To obtain the utmost in spinal fluid serologic diagnosis, the complement fixation and slide precipitation tests with the total protein and globulin determinations should be utilized.

Multiple Benign Cystic Epithelioma.—Summerill and Hutton report the case of a white girl, aged 16, who showed small nodular tumor growths located on each side, well up on the temples to the scalp and down the posterior part of the cheeks to just below and posterior to the ears; on the back of the neck, one or two lesions lay within the margin of the scalp on each side; a few were on the extensor surface of the upper part of the arms, and across the uppermost part of the back, close to the neck, extending over both sides of the spine well toward the shoulders. From a study of their case and a review of the literature the authors conclude that multiple benign cystic epithelioma is a comparatively rare disease. It begins about the age of puberty or in infancy and as a rule affects females. Multiple benign cystic epithelioma has a symmetrical distribution, usually on the face, but in addition affects the neck, thorax, upper part of the upper extremities and rarely the lower extremities. It is often hereditary, affecting two generations in succession but rarely passing to the third. It originates as an outgrowth from the basal cells of the squamous epithelium or the hair follicles. This benign growth of basal epithelium does not undergo a transition into basal epithelioma, which may at times resemble it in early clinical appearance. Multiple benign cystic epithelioma is a disease that can be differentiated histologically from syringocystadenoma, adenoma sebaceum, cylindroma, and adenoma of the sweat glands.

Colorado Medicine, Denver

29: 425-456 (Nov.) 1932

Recent Progress in Medicine. M. H. Rees, Denver.—p. 428.
*Undulant Fever in Colorado. P. J. Connor and F. J. Maier, Denver.—p. 430.
Meningitis in Denver: Statistical Summary of Five Year Period. B. B. Jaffa, Denver.—p. 434.
*Gonorrhea in Women. C. W. Dorsey, Denver.—p. 436.

Undulant Fever in Colorado.—On the basis of a series of fourteen cases of undulant fever in which all the clinical types of the disease as described by Hughes were present, including one malignant case, in which a woman with a history of repeated abortions died following her last abortion, Connor and Maier conclude that undulant fever is a widespread disease, found where searched for, and that it occurs in Colorado, particularly in Denver, more often than is generally suspected. Brucella suis is the cause of the more severe types of undulant fever. Brucella suis is transmitted from the swine to the cow to the human being. Death from it occurs. Necropsy shows nothing more definite than a septic condition. The authors began treatment with a small dose of autogenous vaccine and increased the dose daily as the patient would tolerate it. If too large a dose was given, the patient reacted adversely and the symptoms became worse. In one case they gave as high as 1.5 cc. of autogenous vaccine at a dose. The usual maximum dose was 1 cc. The general treatment was symptomatic—codeine, acetylsalicylic acid, and so on, for pain; sedatives and hypnotics; and hydrotherapy for delirium.

Gonorrhea in Women.—Dorsey gives the various treatments for gonorrhea in women that he found in a review of the literature. In dealing with chronic urethritis, the author feels it helpful to change the drug used for irrigations about once each month and to give bladder instillations of 1 ounce (30 cc.) of a 10 per cent solution of mild silver protein once or twice a week. He alternates between acriflavine hydrochloride, 0.5 per cent, and pyridium, 1:8,000, in the urethral irrigations. In this manner the discharge seems to be controlled more rapidly than when just one agent is used consistently, possibly because the organisms develop a tolerance to a certain drug after a period of time. The author concludes that there has been no specific cure found for gonorrhea in women, but definite advances have been made in the treatment of the disease, especially from the point of view of prevention of complications during or following the acute stage. There is a growing tendency to be less radical and mutilating in the surgical procedures employed. In spite of the interest manifest in this disease, and regardless of all the preventive measures that have been attempted, as long as human life persists the incidence of the infection will probably change little if at all, and one's efforts must be directed toward more rapid and certain methods of definite cure.

Maine Medical Journal, Portland

23: 217-240 (Nov.) 1932

Some Clinical Considerations of Disease of Biliary Tract. F. H. Jackson, Houlton.—p. 218.
Use of Roentgen-Ray Examination in Obstetrics. T. E. Makepeace, Farmington.—p. 221.
The Anemias: Their Diagnosis and Treatment. I. Olef, Boston.—p. 224.

New Jersey Medical Society Journal, Orange

29: 811-892 (Nov.) 1932

A School Health Program for the Physician. A. G. Ireland, Trenton.—p. 811.
Responsibility of County Medical Society to the School and School Physician. S. T. Snedecor, Hackensack.—p. 822.
The Common Cold in the School. Julia C. Mutchler, Dover.—p. 824.
Modern Thyroid Considerations. L. E. Myatt, Bridgeton.—p. 829.
Treatment of Simple Fractures. J. S. Irvin, Atlantic City.—p. 831.
Treatment of Compound Fractures by Closed Cast Method. I. E. Deibert, Camden.—p. 836.
The Private Physician in Community Health Program. L. A. Wilkes, New York.—p. 839.
Value of Antitoxin Serum in Treatment of Pneumonia. C. V. Craster, Newark.—p. 849.
Safe Method of Cataract Extraction: Report of Results in One Hundred Operations. J. S. Shipman, Camden.—p. 852.
New Method for Using Cane Sugar in Infant Feeding: Clinical Report. D. P. Evans, East Orange.—p. 856.
Congenital Atresia of Upper End of Esophagus with Tracheo-Esophageal Fistula: Report of Case. G. S. Reitter, East Orange.—p. 859.
Retrobulbar Neuritis Secondary to Posterior Ethmoid and Sphenoid Sinus Disease. J. A. Fisher and R. W. Baeseman, Asbury Park.—p. 861.

New Orleans Medical and Surgical Journal

85: 301-386 (Nov.) 1932

Functions of County Public Health Department Laboratory. L. S. Lippincott, Vicksburg, Miss.—p. 301.
Control of Filth Borne Diseases in Mississippi, How and When. T. P. Haney, Jr., McComb, Miss.—p. 310.
High Frequency Arc Resection of Prostate. H. W. E. Walther, New Orleans.—p. 318.
Diagnosis and Surgical Treatment of Duodenal Ulcer. R. L. Sanders, Memphis, Tenn.—p. 320.
*Gunshot Wounds of Abdomen. R. W. Smith, Canton, Miss.—p. 327.
Treatment of Lesions of Cervix. V. B. Philpot, Houston, Miss.—p. 332.
Recent Nasal Fractures. C. A. McWilliams, Gulfport, Miss.—p. 336.
*Carcinoma of Larynx with Laryngectomy: Case. R. T. Smith, Natchez, Miss.—p. 339.

Gunshot Wounds of Abdomen.—Smith believes that every patient with a gunshot wound of the abdomen is entitled to the benefits that might be derived from operative intervention. Shock should be combated with the usual therapeutic medication, blood transfusion and, in the absence of a donor, dextrose intravenously. The author particularly stresses the importance of keeping the patient warm by the use of blankets, hot water bottles or electric pads. This should be maintained not only until the patient has reacted from the shock but also during the course of the operation. Obvious hemorrhage demands immediate operative control. When the patient has reacted from shock sufficiently to justify operative measures, the abdomen is opened through an incision long enough to permit thorough exploration. Injuries to the stomach and small intestine demand suture and, in the case of the small intestine, a judicious use of the omentum. Large lacerating injuries may require resection. Injuries to the mesentery may be serious by cutting off the blood supply to a particular segment of intestine and may also require resection. Injuries to the colon, with resulting soiling of the peritoneum by its contents, usually result in a widespread fulminating peritonitis from which few patients survive. In perforation of the spleen with free hemorrhage, splenectomy should be performed. Hemorrhage from the liver often arrests itself spontaneously. Perforation of the pancreas demands free drainage, as the escape of pancreatic secretion into the abdominal cavity may cause necrosis of the abdominal contents. Drainage is indicated in all cases except possibly those in which the stomach is injured. Postoperatively it is important that the patient be placed in the Fowler position and be kept warm, and that fluids be given by proctoclysis, hypodermoclysis or intravenously. Blood transfusion should be done as needed. Morphine is administered in sufficient quantities to keep the patient comfortable. Enterostomy and hypertonic saline solution intravenously are indicated if there is evidence of obstruction.

Carcinoma of Larynx.—Smith reports a case of carcinoma of the larynx in which laryngectomy was followed by the recovery of the patient. In his discussion of the subject the author includes diagnosis, pathology, laryngectomy and complications. He concludes that a most painstaking and careful history must be obtained. A thorough general and local examination must be made in order to select cases. In any intrinsic carcinoma of the larynx, total laryngectomy is the operation of choice. In early cases confined to one cord without fixation, laryngofissure may be done with success. Radium and high voltage roentgen therapy are contraindicated in malignant disease of the larynx. The patients should be strongly encouraged to depend on their esophageal voice in order to prevent depression psychoses.

Oklahoma State Medical Assn. Journal, Muskogee

25: 461-494 (Nov.) 1932

Cerebellar Epidermoid (Cholesteatoma): Case. H. Jeter, Oklahoma City.—p. 461.
Importance of Early Diagnosis in Tumor of Brain. H. Wilkins, Oklahoma City.—p. 463.
Trigeminal Neuralgia. H. E. Hughes, Shawnee.—p. 467.
Emotions in Medicine: Inferiority Complex. M. S. Gregory, Oklahoma City.—p. 468.
*Management of Abortions. J. B. Eskridge, Jr., Oklahoma City.—p. 471.
Obstetric Problems Arising in Prenatal Period. R. E. Emanuel, Chickasha.—p. 475.
Cancer of Uterus in Twenty-Seven Year Old Para Two: Case Report. J. H. Robinson, Oklahoma City.—p. 480.
*Trichomonas Vaginalis Vaginitis. L. C. Northrup, Tulsa.—p. 482.

Management of Abortions.—Eskridge states that all cases of threatened abortion should be considered septic. A digital examination in threatened abortion should not be made unless there is some question as to the diagnosis. Hemorrhage should be controlled by a firm packing in the vagina. Curettage should not be done until after the seventh day. All instrumentation before the seventh day should be the simple removal of decidual tissue from the vagina and cervical canal. In febrile cases, curettage should not be performed from three to five days after cessation of the fever. He concludes that sapremia and endometritis should be treated alike, as they are easily confused. Treatment consists of sedation, fluids as indicated, moist heat over the lower part of the abdomen, and removal of the decidua as indicated; the curet is contraindicated until at least seventy-two hours after the temperature has become normal. Parametritis should be treated symptomatically with supportive methods and by the use of hot rectal irrigations and moist heat over the lower part of the abdomen. Abscesses should not be opened until the patient has had about seventy-two hours to generate specific antibodies to the causative organism. Perimetritis with its associated conditions (culdesac abscess, peritonitis), is responsible for death in from 60 to 70 per cent of cases when present. The patient should be supported by transfusions or any supportive method that is indicated, should have hot packs applied over the abdomen, and should be closely observed. Localized collections of pus should not be drained until they have had ample time to localize. Septicemia requires the same treatment as any other septic case. This condition may also be mistaken for sapremia and may likewise be harmed by the use of the curet. Abortions after the third month are comparatively simple to

treat and should be handled as indicated by the causative factor. The curet is contraindicated in all cases after the formation of the placenta.

Trichomonas Vaginalis Vaginitis.—During a period of twenty-six months, routine microscopic examination of fresh vaginal discharge taken from Northrup's 180 private patients revealed forty-two cases of trichomonas infection. The clinical diagnosis is based on characteristic observations, a scanty, thin, milky and somewhat frothy discharge with a disagreeable odor, and evidence of vaginal irritation in varying degrees of severity. Itching and soreness in the vagina which often extends into the pelvis is nearly always present. The vaginal membranes often bleed easily. Cervical erosions are common and will often heal spontaneously when the organisms are killed. The author found two cases in which Skene's ducts were infected and five cases associated with caruncles. In the laboratory diagnosis of Trichomonas vaginalis, a drop of fresh discharge is mixed with a drop of physiologic solution of sodium chloride on a cover glass. This is examined under the microscope as a hanging drop. If the organism is found, the patient will be benefited if active treatment is instituted to rid her of the infection. The author concludes that a routine examination for Trichomonas vaginalis should be made on all gynecologic patients. Thorough cleansing followed by the use of powdered sulphur is most effective. The use of lactic acid by the patient to restore the natural protective flora completes the treatment. Careful watching over a long period of time will prevent recurrences.

Psychiatric Quarterly, Albany, N. Y.

6: 581-765 (Oct.) 1932

Experimental Toxic Approach to Mental Diseases: Reaction of Brain Tissue to Subcutaneous Injection of Enterogenous Toxic Substances —Indole and Histamine. A. Ferraro and J. E. Kilman, New York. —p. 581.

Skull Deformity Related to So-Called Acrocephalosyndactylia: Case. A. N. Bronfenbrenner, Thiells, N. Y.—p. 612.

Dimensions of the Living Heart in Schizophrenia. R. G. Reed, Central Islip, N. Y.—p. 617.

Method of Mounting Thin Sections of Brain for Museum Display. F. M. Kramer, New York.—p. 623.

*Personality and Catatonic Dementia Praecox. J. R. Blalock, New York. —p. 625.

Prepsychotic Personality of Catatonic Schizophrenics. N. J. T. Bigelow, Utica, N. Y.—p. 642.

*Use of Sodium Amytal, Sodium Rhodanate and Sodium Barbital in the Control or Treatment of the Psychoses. N. D. Black, Anna A. Gronlund and W. R. Webster, Utica, N. Y.—p. 657.

Response of Cases of Hypermotility and Hypomotility to Bulbocapnine Injection: Preliminary Report. H. B. Lang and O. A. Kilpatrick, Utica, N. Y.—p. 666.

A Few Representative Cases of Pyromania. G. L. Warner, Utica, N. Y. —p. 675.

*Three Years' Observations of Intensive Sodium Bromide Therapy in Functional and Organic Psychoses. N. D. Black, Utica, N. Y.—p. 691.

Obstacles of Family Attitudes in Rehabilitation of State Hospital Patients. Mrs. Ethel B. Bellsmith, Central Islip, N. Y.—p. 697.

Personality and Catatonic Dementia Praecox.—In a study of the prepsychotic personality of twenty-five males suffering from the catatonic form of dementia praecox, Blalock brings out the following points: 1. The intellectual and physical endowment seemed average. 2. The motor manifestations and output of energy were below that usually considered normal for childhood and early adolescence. 3. In their relations to the environment the majority were quiet, aloof, stubborn and easily offended and had a limited range of interests. 4. Almost invariably they were reticent, non-self-revealing and overconscientious and had few or no friends. A majority were passive and submissive. A partially or totally shut-in personality was present in 72 per cent. 5. The emotional reaction seemed to be somewhat inadequate. 6. In the majority of cases there was a lack of sexual adaptability.

Use of Sodium Amytal, Sodium Thiocyanate (Rhodanate) and Sodium Barbital in the Psychoses.—Black and his associates have used and observed sodium bromide for nearly six years in the treatment of the psychoses. From their observations they feel that definite therapeutic results have been demonstrated; that is, the improved cases have been maintained at a higher level and are productive. In four cases of psychosis with epilepsy in which sodium thiocyanate was given, the reaction was as follows: the two deteriorated cases became somewhat more disturbed but seizures were not influenced; the two cases showing a well preserved personality reacted by showing severe increase in both psychotic manifestations and convulsive seizures. They consider this drug contraindicated in these individuals. The use of sodium amytal to induce and sodium barbital to supplement prolonged sedation offers, they believe, a field for further investigation and from their experience offers a method of control in extremely exitable cases. Except for immediate effects, sodium amytal did not appear to have a better sedative value than the more prolonged use of sodium barbital or sodium bromide. Sodium thiocyanate showed beneficial results in a few cases but it seemed to have a more limited field than the other drugs considered in their series. The authors hope that at a later date they may be able to show more concrete results.

Intensive Sodium Bromide Therapy.—From a three years' observation of intensive sodium bromide therapy in functional and organic psychoses, Black states that of the 129 patients treated, 97 showed varying degrees of improvement, 25 were unimproved and 7 died. Of the patients who died, the death of only one was thought to have been even indirectly associated with the treatment, this case having shown signs of bromide intoxication four days before the development of a fatal bronchopneumonia. Of the 129 cases treated, 50 showed a gain in weight, 79 showed a loss. Of 86 cases treated in a first series, a bromide rash developed in 10, and 4 of these required at least two courses of solution of potassium arsenite to relieve the condition. Subsequent observations of the total 129 cases treated showed that a rash developed in only 5, and these yielded to a single course of treatment. Many patients who had regressed to the vegetative level were sufficiently improved to become actively engaged in useful work. A number of the patients were extremely destructive; they became sufficiently improved so that they either did not exhibit this behavior or, if at all, only to a limited extent. In no case was it considered that bromide hastened the progress of mental deterioration. The greatest improvement was noted in the patients who had regressive psychoses and so-called conduct disorders. Under careful supervision, bromide is a safe form of treatment.

Public Health Reports, Washington, D. C.

47: 2191-2216 (Nov. 18) 1932

Epidemiologic Study of Plague in Peru, with Observations on Antiplague Campaign and Laboratory Work. C. R. Eskey.—p. 2191.

Southern Surgeon, Atlanta, Ga.

1: 173-264 (Oct.) 1932

Present Status of Surgery of Gallbladder. R. L. Sanders, Memphis, Tenn.—p. 173.

*Surgical Considerations in Undulant Fever. W. M. Simpson, Dayton, Ohio.—p. 184.

Observations Drawn from Two Thousand Eight Hundred and Thirteen Thyroidectomized Patients, with Especial Reference to Hyperthyroidism and Hypothyroidism. A. G. Brenizer, Charlotte, N. C.—p. 193.

Fractures of Upper End of Tibia, Involving Articular Surfaces. T. P. Goodwyn, Atlanta, Ga.—p. 209.

*Cancer of Larynx: Its Treatment by Laryngofissure. C. Jackson, Philadelphia.—p. 223.

*Vaginal Ureterolithotomy. D. B. Cobb, Goldsboro, N. C.—p. 230.

Is Prostatic Hypertrophy Preventable? J. F. McCarthy, New York.—p. 242.

*Diagnosis and Treatment of Carcinoma of Rectum and Rectosigmoid. F. W. Rankin, Rochester, Minn.—p. 247.

Undulant Fever.—Simpson states that undulant fever has rapidly evolved from the obscurity of a clinical curiosity to the prominence of an important public health problem. Approximately 3,000 cases have been recognized in this country during the past two years. In and about Dayton, Ohio, 132 cases of undulant fever have been discovered during the past three years. The fact that the largest number of cases have been found in those states in which certain investigators have concentrated their efforts on this disease would seem to indicate that the disease is probably passing unrecognized in many other parts of the country. Undulant fever possesses important surgical aspects, chiefly because of the ease with which it may be confused with appendicitis and cholecystitis in certain cases. In view of the predilection of the organism for the genital tract, it bears an etiologic relationship to certain cases of abortion, tubo-ovarian abscess, seminal vesiculitis, prostatitis, epididymitis and orchitis. The joint manifestations of the disease make it a diagnostic problem for the orthopedic surgeon. The clinical manifestations of the disease are usually sufficiently characteristic to enable the physician to arrive at

an initial diagnosis of undulant fever. The two important sources of infection for man are the ingestion of raw milk or unpasteurized dairy products containing Brucella, or direct contact with infected fresh animal tissues. The transmission of milk-borne infection to human beings may be eliminated by pasteurization of milk and dairy products. Many observers haye reported favorable results with specific vaccine therapy. The author utilized this form of treatment in sixty cases with results that appear to justify its use.

Cancer of Larynx.—Jackson believes that in early intrinsic cases of cancer of the larynx at least 80 per cent of relative cures can be obtained by the comparatively minor and nonmutilating operation of laryngofissure. To obtain such statistical results the operation must be strictly limited to the class of cases mentioned and the disease must be recognized early. Early diagnosis depends on the recognition by the public of the general principle that continuous or intermittent hoarseness should be regarded as malignant until examination of the larynx by the physician has proved it benign. Direct laryngoscopy is indicated in every patient with hoarseness if the anterior commissure cannot be seen with the mirror.

Vaginal Ureterolithotomy. — On a basis of his personal experience with four vaginal ureterolithotomies and from a study of all available case reports in the literature, Cobb draws the following conclusions: 1. Vaginal ureterolithotomy is a comparatively simple method of removing a stone from the lower ureter, a location that makes other methods difficult. 2. It should be reserved for those cases in which stones are readily palpable on vaginal examination and in which there is sufficient vaginal relaxation to assure adequate exposure. 3. It affords dependent drainage, should urinary leakage occur. 4. The possibility of a permanent ureterovaginal fistula seems to have been exaggerated. 5. An external incision with the attendant possibility of hernia is avoided. 6. The period of convalescence is shortened.

Carcinoma of Rectum and Rectosigmoid.—Rankin states that the diagnosis of carcinoma of the rectum will be made accurately in practically all cases if careful digital examination or digital and proctoscopic examination is made. The author gives what in his experience are the most important symptoms of carcinoma of the rectum, in the order of their importance: (1) change in intestinal habit, (2) bleeding and (3) pain. To explain change in intestinal habit is not a simple matter, for, in the first place, a normal intestinal habit is not uniform to all people, and, in the second place, it is difficult to elicit on direct examination of patients a history of changes in their habits. He believes that alternating periods of diarrhea and constipation are perhaps the changes noted most frequently. Bleeding, as a chief complaint or as an associated symptom, was noted by Buie in 84 per cent in a statistical study of 1,937 cases, whereas pain, in one or the other of these capacities, was noted in 67.4 per cent. Obviously, bleeding cannot occur until the mucous membrane of the bowel has been invaded, nor can the length of time the symptoms have persisted be evaluated accurately because, unquestionably, the growth has been present in many instances for a long period before the patient's attention has been called to it. The author emphasizes the fact that blood, whether mixed with the stool or on it, is the most constant symptom of malignant disease of the lower part of the intestine and rectum. It is probably one of the earlier manifestations, and, as a premonitory symptom and warning signal, invariably should call for complete examination of the parts in an effort to rule out malignant conditions. The choice of methods of treatment of rectal and rectosigmoid carcinoma lies between radical surgery and radium, or a combination of the two. The author submits to radical operation all patients with carcinoma of the rectum and rectosigmoid in whom he believes the growth susceptible of extirpation. His choice of operation has been the graded, combined abdominoperineal resection in two stages. The first stage consists of exploration through an incision low in the median line, which permits inspection of the entire abdominal cavity and the decision as to whether or not the growth is removable. The growth is removed and a colonic stoma established and, after the wounds have healed, it is his custom to allow from one month to six weeks to elapse before the patient returns for the second operation. At the second stage the rectum, the rectosigmoid and part of the sigmoid are removed by combined abdominoperineal resection, which starts from behind. The rectum is mobilized up to the peritoneal fold and then encased in a rubber glove and thrust back into the pelvis and the wound is closed. He uses sacral anesthesia. Following this the patient is turned on his back, an incision is made in the median line, and the inferior mesenteric vessels are ligated close to their origin, after identification of both ureters has been made. The pelvic peritoneum is opened and the whole segment is lifted out through the abdominal wound. A new pelvic diaphragm is made and the wound is closed. Drainage is provided by putting in a small pack to control whatever oozing there may be. His experience with this type of operation in a large series of cases has proved satisfactory. In his first series he operated in twenty-three consecutive cases before a death occurred.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Journal of Tropical Medicine and Hygiene, London

35: 321-336 (Nov. 1) 1932

Etiology of Yaws. C. R. Steel.—p. 321.
Malaria and Plasmoquine Prophylaxis in Railway Colony at Pandharpur (India). K. Lindberg.—p. 324.
Schistosomiasis. N. P. Jewell.—p. 326.

35: 337-352 (Nov. 15) 1932

Cystitis Due to Bacilli of Metadysentery Group (B. Ceylonensis A, B, Ceylonensis B, B. Madampensis). A. Castellani and M. Douglas.—p. 337.
Notes on Mosquito-Borne Diseases in Southern Nigeria: IV. Sex Ratio of House Haunting Mosquitoes. D. Anderson.—p. 340.
Congenital Hypertrophy of the Right Hand: Case. K. F. McMurtrie.—p. 343.

Lancet, London

2: 1091-1144 (Nov. 19) 1932

Hematuria. A. Fullerton.—p. 1091.
*Tropical Ulcers: A Quick and Successful Method of Treatment by Excision and Skin Graft. C. James.—p. 1095.
*Adrenal Neuroblastoma: Case with Metastases Causing Blindness. F. W. Law.—p. 1101.
Notes on Hypnotic States. A. Cannon.—p. 1103.
Three Fatal Cases of Pulmonary Embolism in Relation to Pregnancy. J. Beattie.—p. 1105.

Tropical Ulcers.—James found a surprisingly successful method of treatment in excision and skin graft, seeds being the surest method of graft and the easiest of application. In suitable cases, Thiersch grafts can be combined with seeds. The results of his method in forty-five cases were completely successful in 91 per cent, partially successful in 7 per cent and nonsuccessful in 2 per cent. The average time taken for complete epithelization of the area was thirteen days. The author's method of treatment is as follows: Thirty minutes before the spinal anesthetic the patient is given ½ grain (0.03 Gm.) of ephedrine by mouth and, if nervous, an injection of ⅙ grain (0.01 Gm.) of morphine sulphate, 1/100 grain (0.00065 Gm.) of scopolamine hydrobromide and 1/100 grain (0.00065 Gm.) of atropine sulphate. The former in the author's later cases has been prophylactic against headache following the procaine hydrochloride. In the operating room the patient is given intraspinally 1 cc. of a 10 per cent solution of procaine hydrochloride in physiologic solution of sodium chloride. The ulcer is rubbed with tincture of iodine and the surrounding skin is painted with iodine posteriorly and laterally as well as round the ulcer. With a scalpel and toothed forceps a "slice" which includes the ulcer is excised from the leg. The edema underneath an acute ulcer usually allows it to be excised easily without going deeper than the superficial fascia. When the ulcer is chronic, and the scar, fascia and periosteum are just one tough layer, the excision, which takes away much of this scar tissue, goes deeply enough not to touch the bone but removes the entire ulcer. Should the base of the ulcer be accidentally penetrated by the knife, it is necessary to reexcise the whole area, removing a thin slice all over and using another scalpel. With seed grafts, absolute hemostasis is not necessary. The sterile towel covering the prepared skin area is removed and a darning needle with a sharp point is jabbed gently into the skin. A "tent" of epidermis is lifted. A razor blade fixed in a pair of Kocher's forceps incises this tent by cutting just below the needle. This small seed is placed on the new ulcer bed, more seeds being removed until the ulcer

is covered. The closer together the grafts are applied, the shorter is the time of healing. The optimum is the depth of a Thiersch graft. So long as the area from which the seed has been taken is gray and points of hemorrhage appear—though minute areas of yellow fat are frequently visible—and the raw area of the seed is not yellow, the seed will be suitable. The graft is carefully covered by paraffin wax gauze, sterilized by steeping in compound solution of cresol for thirty minutes. With a swab dampened in saline solution, the seeds are gently but firmly pressed on the base, any blood is soaked up, and dry gauze is applied over the wax gauze. Absorbent cotton is shaped so as to fit accurately over the graft, giving equal pressure. Over this is placed a layer of cotton well soaked in equal parts of glycerin and red lotion, which soaks the cotton pad. (Red lotion is zinc sulphate, 0.45 Gm., in compound tincture of lavender, 2.08 cc., and distilled water to 100 cc.) More cotton is applied and a bandage is bound gently but firmly over all. The same dressing is applied to the denuded area, and the patient is returned to bed. When an ulcer is situated over the malleoli or anterior to the ankle joint, plaster is advisable, a window being cut out at the first dressing two days after operation. On the second day the dressing is removed down to the wax gauze by soaking it in glycerin lotion. If there is no sign of sepsis, a fresh dressing is applied and the ulcer left for a further three days, or longer. The wax gauze can be removed after a week. If there is the slightest sign of sepsis, the wax gauze is removed and the graft is dressed with eusol covered with a protective dressing. The patient is allowed up when the area is dry and completely epithelialized. The graft can be covered with petrolatum or hydrous wool fat and a bandage worn till the skin is strong.

Suprarenal Neuroblastoma.—Law reports a case of suprarenal neuroblastoma with metastases causing blindness in a boy, aged 11 months, in whom the distribution of the secondary deposits was by no means typical; for instance, none were found in the lumbar glands, and there was evidence of only one in the cranial bones. The subdural deposits were unusual; though the case presented the common symptom of blindness, this came about in an entirely unusual and theretofore unrecorded manner, and there was never any proptosis, papilledema or optic atrophy, such as is almost invariably present in these cases. Diagnosis was extremely difficult and was never definitely made; at one time that of leukemia was considered, though no fundus change of any kind was present. The secondary anemia was typical; but there was also a definite lymphocytosis, which has not been remarked before. The author gives no explanation as to the nature of the subcutaneous nodules but states that it is possible that these were really atypical secondary deposits of which the cellular elements had degenerated.

Medical Journal of Australia, Sydney

2: 589-616 (Nov. 12) 1932

*Myxedema. E. H. Stokes.—p. 589.
Hydatid Mole and Chorionepithelioma: New Method of Diagnosis and Prognosis. B. Mayes.—p. 603.

Myxedema.—Stokes reports briefly on ten patients with classic and six with incomplete myxedema. He discusses the etiology, pathology, clinical features, diagnosis, prognosis and treatment as it pertains to myxedema. He concludes that the importance of its recognition lies in the fact that it is one of the diseases for which there is a specific remedy. The essential part of treatment is the use of thyroid substance. The therapeutic use of thyroid substance may conclude the diagnosis. It is therefore necessary to employ a thyroid preparation of known potency. Owing to the earlier use of fresh thyroid, it was the custom to standardize the dried substance in terms of the fresh gland, 1 grain of the dried gland equaling 5 of the fresh gland. On account of the varying composition of the thyroid obtained from sheep at different seasons of the year and from different pastures, it was found necessary to abandon the standardization in terms of the fresh gland. The treatment consists of two stages, the objective of the first stage being to remove the manifestations of the disease and of the second to maintain the patient in health. The second stage must be continued throughout the life of the patient. It is both wise and necessary to confine to bed patients suffering from cardiovascular complications during the first stage of treatment. As patients suffering from myxedema are sensitive to thyroid medication, it is best to start with a small dose. The proper dose is controlled by the clinical response of the patient, the basal metabolism, the resting pulse rate and the body weight. One may add that the cholesterol content of the blood serum is also a valuable guide as to dosage. While an initial determination of the basal metabolic rate and an initial estimation of the blood serum cholesterol are almost essential, the repeated use of these laboratory methods of investigation is not indispensable in following the progress of the treatment. The general condition of the patient and the resting pulse rate are most valuable guides. When myxedema is associated with cardiovascular degeneration complicated by a severe grade of anemia, the raising of the metabolism by thyroid substance is apt to cause an excessive increase in the pulse rate, as each unit of blood contains less oxygen than normal. Attention should be paid to the elimination of gross focal sepsis, and a mixed diet of adequate iodine content, consisting of an abundance of milk, fish, cereals, fruit and vegetables, and a small amount of meat, should be advised. Foods rich in cholesterol, such as brains, ham, bacon, egg yolk and cream, should be restricted. Thyroxine is recommended by some authorities instead of thyroid substance. Plummer and Boothby found that 1 mg. of thyroxine injected intravenously caused a rise of 2.8 per cent in the basal metabolic rate. The patient is restored to normal health within a few weeks.

2: 617-646 (Nov. 19) 1932

*Antenatal Treatment of Breech Presentations. H. C. E. Donovan.—p. 617.
Management of Breech Delivery. P. L. Hipsley.—p. 621.
Distribution of Radiation Intensity Around Different Forms of Radium Applicators. W. H. Love.—p. 624.
*Aschheim-Zondek and Other Laboratory Tests for Pregnancy. G. V. Rudd and W. W. Ingram.—p. 629.

Breech Presentations.—According to Donovan, the incidence of breech deliveries and the appalling stillbirth and neonatal death rate call for serious consideration. The maternal results are less favorable in breech presentations than in vertex deliveries, and there are increased risks of infection and a greater incidence of gross mechanical lesions, causing more or less chronic invalidism and necessitating surgical operations at a later date. Skilled delivery is capable of greatly reducing the bad results for both child and mother, but the necessary skill to obtain such good results can be obtained only at the cost of a high mortality. The results obtained by external version performed at the appropriate time improve the statistics to a great extent, and external version should be attempted in all cases. Among ninety-one cases in which version was attempted, it was successful in thirty-eight of forty-seven primiparas and forty-two of forty-four multiparas. Seventy-six of the babies from the eighty successful versions left the hospital alive and well, and four were still-born, a fetal mortality of 5 per cent. In three of the eleven cases in which version failed and in which delivery was by the breech, three babies died at or soon after birth. In one of the successful cases, movements ceased immediately after version and the mother was delivered of a macerated fetus a fortnight later. In this case the death of the fetus can be ascribed to version. In no case was there prolapse of the cord or limbs. One mother in this group died of sepsis. During the same period, in 100 consecutive breech deliveries there were 19 stillbirths and 12 neonatal deaths, a total fetal mortality of 31 per cent. Cesarean section has a small but definite place in the treatment of breech presentations. It is unfortunate that the frank breech presentations that cause most of the failures in turning are those that cause great difficulties and dangers during birth. It is among these that most of the justifiable cesarean sections fall.

Pregnancy Tests.—Rudd and Ingram state that in the 145 cases in which the Aschheim-Zondek test was used, the results were correct in every instance. They propose a more rapid pregnancy test, based on the Aschheim-Zondek technic. The time taken by the test is from fifty-five to seventy hours. Their test is as follows: The early morning specimen of urine, slightly acid to litmus, is mixed with three volumes of absolute alcohol and allowed to stand for thirty minutes. The mixture is centrifugated and the supernatant fluid is poured off. The precipitate is taken up in a small volume of water and the mixture is again centrifugated. The aqueous extract is found to be highly active. The precipitate may be spun down in a 100 cc. centrifuge tube in three spins, the super-

natant fluid being discarded each time. The supernatant fluid is decanted off and the tube drained for a few minutes, or, if the precipitate is bulky, the tube is placed in a water bath at 40 C. and exhausted for a few minutes in order to remove most of the alcohol. The precipitate is taken up with 1.5 cc. of distilled water and transferred to a 10 cc. centrifuge tube. The large centrifuge tube is washed out with three quantities of 0.7 cc. of distilled water and the washings added to the 10 cc. centrifuge tube. After thorough mixing, the insoluble portion is centrifugated out. The concentration effected by the procedure is about 15 to 1. After preliminary tests with the concentrates prepared in this manner, the preparation of the concentrate from urine was commenced in the morning. Four mice, from 28 to 30 days old, received two injections of from 0.3 to 0.4 cc. at an interval of six hours. Fifty-five hours after the first injection, the ovaries of two of the mice were examined. If hemorrhagic follicles were not seen, the remaining mice were examined about seventy hours after the first injection. The finding of one hemorrhagic follicle constitutes a positive reaction. In the absence of hemorrhagic follicles, the result of the test is "negative." The authors employed their test with sixty-five specimens of the urine of pregnancy. All but six reacted positively at fifty-five hours. Of the six, five reacted positively at from sixty-eight to seventy hours. The one that failed to give a positive reaction either at fifty-five or seventy hours was a very dilute specimen of urine passed during the afternoon and was almost colorless. The authors also gave two intravenous injections of 10 cc. of urine at an interval of six hours to fourteen rabbits. Forty-five hours after the first injection, the animals were killed and their ovaries were examined. The ten that had been injected with the urine of pregnancy all had hemorrhagic follicles in the ovaries. The remaining four, which received injections of urine from nonpregnant women, had no hemorrhagic follicles. In those instances in which the test is urgent, the rabbits' ovaries could be examined in twenty-four hours and a positive result would then end the test.

Annales de Dermatologie et de Syphiligraphie, Paris

3: 977-1072 (Nov.) 1932

Exotic Syphilis: Pathogenesis and Therapy. A. Sézary.—p. 977.
*Histocytoma of Skin. F. Woringer and S. Kviatkowski.—p. 998.
Flocculation Reactions. M.-L. Chevrel-Bodin and M. Cormier.—p. 1011.
Venereal Ecchymosis "A Vacuo" of Mucosa. R. Barthélemy.—p. 1021.

Histocytoma of Skin.—Under the name of histocytoma, Woringer and Kviatkowski describe certain small benign tumors of the reticulo-endothelium occurring in the dermis of the extremities, rarely of the trunk, of healthy adults. They are usually single, but sometimes from two to five appear. They grow slowly and attain the size of a cherry pit, rarely that of a nut. The small tumors do not rise above the surrounding surface. On palpation they feel hard and well circumscribed. The large ones may protrude above the surrounding surface and also develop down into the subcutaneous layers but are never adherent there. The skin over the tumor exhibits a rose-bister color. The tumors have a collagenous stroma but consist mostly of cellular elements. The cells are generally fusiform and they may be infiltrated with fat and particularly with cholesterol. The lipoid infiltration varies in different parts of the tumor and from one cell to another. It is the presence of these cells charged with fat which differentiates the histocytoma from the flattened fibroma, which it resembles histologically as well as clinically. Histocytomas also resemble xanthomas; but the latter are characterized by an abundance of large foam cells, whereas in the former the true foam cells are rare and the cells generally retain their fusiform aspect.

Archives de Médecine des Enfants, Paris

35: 697-771 (Dec.) 1932

*Pulmonary Abscesses in Children. J. Hutinel, R. Kourilsky and E. Nicolas.—p. 697.

Pulmonary Abscesses in Children.—Hutinel and his associates state that pulmonary abscesses in children are usually acute, monomicrobic and nonfetid, but subacute putrid abscesses may be encountered. They are usually primary but may occur secondarily to a rhinopharyngeal infection or to trauma from a foreign body. The first stage is that of an acute pneumopathy. There is a peripheral inflammatory reaction surrounding the central focus which is going to suppurate. This focus evolves toward simple suppuration (acute abscess) or toward localized necrosis, followed by suppuration (fetid abscess). The second phase consists in bronchial evacuation of the abscess, starting about the tenth day in acute abscess and earlier in fetid abscess. The pus is discharged during an attack of coughing. Simple acute abscesses usually heal spontaneously, but putrid abscesses usually develop into chronic diffuse suppuration. The essential elements of positive diagnosis are the appearance of a purulent elimination by the respiratory passages during an acute or subacute bronchopneumonic attack and a roentgenographic image of a circumscribed hydro-aeric cavity of oval form with vertical axis and without connection with the thoracic wall. In children the purulent discharge must sometimes be looked for in the vomit. The roentgenographic image may appear simply as a darker spot in an area of condensation or, exceptionally, may be lacking. The impossibility of injecting iodized poppy-seed oil into the suppurating cavity by the tracheobronchial route is a valuable diagnostic sign. Pulmonary abscesses in children are most easily confused with encysted pleural suppurations, especially those in the posterior or subaxillary region of the pleural cavity. The hydro-aeric images of encysted pleurisies are, in general, larger than those of pulmonary abscesses, have a transverse development and are rarely at the height of the large fissure, but more often at the base. Injection of the iodized poppy-seed oil directly into the pleural cavity is of diagnostic value in suppurations of the base of the cavity. Encysted pleural cavities can be injected intrabronchially much easier than lung abscesses. Roentgenography with intratracheal injection of iodized poppy-seed oil is also the method for differentiation between lung abscesses and bronchial suppurations. Because of the frequency of spontaneous cure of lung abscesses, treatment should be chiefly expectant. In addition to the usual measures taken in beginning acute bronchopulmonary infections, emetine hydrochloride may be injected subcutaneously in doses of from 0.01 to 0.03 Gm. Specific vaccine therapy may also be employed. Surgical intervention should not be undertaken unless cure is retarded beyond two months. When this happens, as in the rare cases of putrid abscess, pneumotomy in two stages should be performed to avoid chronic evolution toward bronchiectasis and retractile pulmonary sclerosis.

Diagnostica e Tecnica di Laboratorio, Naples

3: 637-732 (Aug. 25) 1932

Research on Function of Liver: I. Galactose Tolerance Test in Hepatic Diseases. P. de Lucia and M. Torella.—p. 637.
*New Method for Microdetermination of Calcium in Blood. G. Scotti.—p. 657.
Alleged Inhibitory Power of Peptone on Growth of Tubercle Bacilli. G. Buonomini.—p. 665.
Method and Observations on Dosage of Urea with Apparatus of Van Slyke. G. C. Torri.—p. 669.

Microdetermination of Calcium in Blood.—Scotti reviews several methods and then advocates the following technic: Two cubic centimeters of blood plasma or blood serum is dried in a platinum capsule on a water bath and the residue incinerated. The ashes are dissolved in 0.5 cc. of a normal solution of hydrochloric acid and the solution is poured in a centrifuge tube. The capsule is washed with bidistilled water which is also poured into the tube. The tube is placed in a boiling water bath; two drops of a 1:10,000 solution of methyl red are added to the solution, which is neutralized with three normal ammonia. This produces precipitation of ferric hydroxide and of calcium and magnesium phosphate. The solution is acidified again with lactic acid, added drop by drop, and is kept in the boiling water bath until the precipitate is almost dissolved. The iron passes in solution under the form of lactate, which is not precipitable. The precipitated phosphates are redissolved but cannot precipitate the calcium because of the acid reaction of the liquid. This acidity, however, does not disturb the precipitation of the calcium oxalate. Therefore, 0.5 cc. of saturated solution of ammonium oxalate is added; all the calcium will be precipitated in the form of oxalate, as the previous treatment eliminated all the other elements that hinder its precipitation. The precipitate is allowed to settle for an hour and is filtered by pump through a microfilter with a bottom of porous glass. In the absence of a pump, the suction can be done by mouth through a pipet. The precipitated solution is washed with saturated solution of calcium oxalate: this

will avoid dissolving part of the precipitate which might be lost while the excess of ammonium oxalate not needed by the precipitation is removed. It is sufficient to wash with 5 cc. of the saturated solution of calcium oxalate five times. The precipitate is dissolved by 5 cc. of hot normal solution of sulphuric acid and the filter is then washed with 10 cc. of bidistilled water. The filtrate is collected in a beaker previously washed with a solution of potassium permanganate and bidistilled water. The beaker is placed in a boiling water bath and a solution of hundredth normal potassium permanganate is added drop by drop from a graduated pipet. The quantity of the solution of hundredth normal potassium permanganate necessary to produce the reddish coloration in 5 cc. of normal solution of sulphuric acid being known, this value is deducted from that obtained in the dosage of the oxalate; this leaves the exact quantity of hundredth normal potassium permanganate used for the dosage. The results obtained with this method are more than satisfactory. The author found that the calcium in the blood of guinea-pigs, rabbits and rams contained, respectively, 0.06 Gm. of calcium per liter (average of six determinations), 0.092 Gm. of calcium per liter (average of five determinations) and 0.13 Gm. of calcium per liter (average of five determinations).

Archiv für Verdauungs-Krankheiten, Berlin

52: 337-482 (Nov.) 1932

Chemical Investigations on Pathologic Hepatic Bile: Modification by Carlsbad Water. W. Nonnenbruch and P. Mahler.—p. 337.
*Value of Fish and Fish-Roe in Diet. A. Bickel.—p. 361.
*Differential Diagnostic Significance of Viscerovisceral Reflexes in Abdomen. A. Ohly.—p. 376.
*Investigations on Lability of Autonomic Nervous System of Patients Operated on for Gastric Ulcer. F. Berner.—p. 400.
Acidity Conditions of Stomach in Simple Gastric Ptosis. J. Vándorfy.—p. 405.
Diverticulitis of Colon. Berta Oschinsky.—p. 415.
Gastritis Problem in Light of Modern Functional Tests of Stomach. W. Schemensky and J. Geling.—p. 427.

Fish and Fish Roe in Diet.—Bickel describes his studies on various kinds of fish roe (caviar). The chemical analysis shows that caviar has a high caloric value, for it is rich in protein and lecithin, and contains considerable amounts of fat. Physiologic investigations revealed that the protein of fish roe is well utilized in the intestine, that it stimulates the gastric secretion better and longer than meat, and that its content in growth vitamins is considerable. All these characteristics make the less expensive types of fish roe valuable in general nutrition and in the diet of certain patients, particularly in emaciation, during convalescence, in diabetes and during digestive disturbances with deficiency of gastric secretion. Its high nutritive value is of primary importance. The author reports his studies on the value of certain fish, particularly pike-perch. Chemical analysis showed that the meat of this fish is almost a pure protein food. The physiologic tests revealed its stimulating action on the gastric secretion, the good utilization of its protein in the intestine, and its high content in growth vitamins.

Diagnostic Significance of Viscerovisceral Reflexes.—Ohly deplores that, as a result of the progress in roentgenoscopy, the study of the viscerovisceral reflexes has been somewhat neglected in recent years, but he emphasizes that, for the general practitioner who does not have the facilities of a modern clinic, a knowledge of the viscerovisceral reflexes is essential for the topographic diagnosis. The gastro-intestinal canal plays an important part in the viscerovisceral reflexes, not only because it is the largest abdominal organ but also because of its complicated innervation. According to the predominance of the parasympathetic or the sympathetic irritation and depending on the reactivity of the sympathetic nervous system of the individual patient, the effects of the viscerovisceral reflexes become manifest in hyperperistalsis or hypoperistalsis and in hyperkinesis or hypokinesis with spastic or atonic conditions. Viscerovisceral reflexes of the gastrointestinal tract can be produced by the biliary passages, the pancreas, the kidney with the urinary passages and the prostate, genital disorders, abdominal hernias, postoperative adhesions, disorders of the abdominal lymph nodes and, interchangeably, the stomach and the intestine. The author discusses these various possibilities and illustrates them in case reports. In his conclusion he emphasizes once more that a knowledge of the viscerovisceral reflexes prevents many diagnostic errors. The so-called organ neurosis gains a new aspect from the point of view of the viscerovisceral reflexes, because in many instances it will prove to be a secondary neurosis produced by a primary, frequently masked, disorder of another organ.

Autonomic Nervous System of Patients Operated on for Gastric Ulcer.—In the course of roentgenologic examinations on patients who had been operated on for gastric ulcer, Berner observed that all those who asked medical aid on account of persisting or reappearing disorders showed changes indicative of gastritis or jejunitis on the relief of the mucous membrane. The ulcer had relapsed or a peptic jejunal ulcer had developed in a few cases. Since the most widely accepted theory of the pathogenesis of gastric ulcer assumes that disorders in the sympathetic nervous system play an important part in its development, the author thought it advisable to determine whether these patients showed lability of the sympathetic nervous system. This was done by watching for changes in the blood pressure, pulsation and respiratory frequency following intravenous administration of epinephrine, atropine and pilocarpine. It was found that seventeen out of twenty patients who had been operated on showed increased reactions (heterotonia). Clinical manifestations such as tachycardia, hot flashes, sweating, increased salivation or dryness in the mouth, and dermographism were also taken into consideration, particularly in those cases in which the reaction of the blood pressure and the frequency of the pulse showed marginal values. The basal metabolism was also determined, in spite of the fact that none of these patients showed signs of thyrotoxicosis. In seventeen of twenty patients the basal metabolic rate was increased more than 10 per cent.

Deutsche Zeitschrift für Chirurgie, Berlin

238: 129-264 (Dec. 14) 1932. Partial Index

*Coagulability and Thrombosis. A. Fonio.—p. 129.
Experimental Studies of Extension and Rôle of Rhythmic Extension. W. Müller.—p. 173.
*Extirpation of Mandibular Nerve and of Otic Ganglion and Sectioning of Trunk of Trigeminus. W. Braeucker.—p. 185.
Alimentary Lipemia in Normal Stomach and Stomach That Has Been Operated on. C. H. Schröder.—p. 239.
Contribution to Knowledge of Volvulus of the New-Born. W. M. Kreiner.—p. 248.
Congenital Lateral Inguinal Hernia. L. Drüner.—p. 261.

Coagulability and Thrombosis.—In Fonio's opinion, attempts at prevention of thrombosis should be directed primarily against the tendency to thrombus formation which is the result of changes in the endothelium of the veins, rather than against increased coagulability of the blood. Factors capable of inducing changes in the endothelium in postoperative cases are infection, exogenous or endogenous, and stasis of circulation. The author considers thyroxine the most valuable medicinal agent in the prophylaxis of thrombo-embolism because of its accelerating effect on the elimination and its prolonged effect in lowering blood coagulability. The tendency to slowing on the part of the circulation in postoperative cases should be combated by both local and general measures. Among the local measures are the position of the lower extremities and the early resumption of active movements. Among the general measures, the author insists on a preoperative period of cardiac therapy in cases in which a difficult or prolonged operation is anticipated, as well as in patients with circulatory disturbances. Measures directed against increased coagulability can be regarded as of only secondary importance because it is the result of endothelial changes, which in themselves constitute the essential cause of thrombosis.

Operation for Trigeminal Neuralgia.—Braeucker states that the operation of extirpation of the entire gasserian ganglion, as advocated for the severe cases of trigeminal neuralgia, has been replaced by less radical but equally effective procedures. These occupy less time, avoid many of the dangers of the former operation, and are limited in their effect to the particular area of sensory disturbance. Today, the operation of choice for real trigeminal neuralgia is a total or subtotal sectioning of the portio major of the trunk of the trigeminus nerve. The author describes his own method with anatomic and topographic indications, the important feature of which is the ease with which the danger of severing the branches of the facial nerve supplying the muscles of the eye and of the forehead is avoided. The cranial cavity is exposed by a lateral opening of not more than 3 cm. in diameter. In

the rarer cases of the so-called otic-mandibular neuralgia, in which the pain, in addition to the trigeminus paths, radiates also over the branches of the sympathetic centrad, the author, in place of extirpating the sensory root of the trigeminus, extirpates the mandibular branch of the trigeminus and the otic ganglion.

Klinische Wochenschrift, Berlin

11: 1977-2016 (Nov. 26) 1932

Experimental Foundations of and Inferences from Regeneration Theory of Tumor Formation. B. Fischer-Wasels.—p. 1977.
Experimental Production of Leukemia, Aleukemia, Myelosis, Lymphadenosis and Lymphosarcoma. W. Büngeler.—p. 1982.
*Typical Chemical Change of Protein Bodies in Blood Plasma in Carcinoma. P. F. Merzbach.—p. 1984.
Determination of Quantity of Blood by Means of Combination of Inhalation Method and Dyestuff Method in Normal Persons and in Polycythemia Rubra. E. Frank, L. Auerbach and Erna Stanner.—p. 1985.
*Hypophyseal Emaciation and Insulin. H. Lucke.—p. 1988.
Manganese Poisoning in Workers in Manganese Industry. Doris Mosheim.—p. 1989.
Reticulocytes and Central Nervous Regulation of Blood. R. Ginzberg and L. Heilmeyer.—p. 1991.
Action of Circulatory Hormone Produced in Pancreas on Blood Sugar in Diabetes Mellitus. A. W. Elmer and M. Scheps.—p. 1993.
Applicability of Roentgen Paper for Diagnosis of Tuberculosis. J. Weissfeiler.—p. 1995.
Action of Parathyroid Extract. E. Homann.—p. 1996.
Agressin of Gonococci. W. Casper.—p. 1996.
New Substrate for Blood Examination for Detection of Malignant Tumors. H. J. Fuchs.—p. 1997.
Therapy of Diabetic Coma. F. Bertram.—p. 1998.
Mortality Rate of German Physicians According to Specialties. K. Freudenberg.—p. 2001.

Change of Protein Bodies in Carcinoma.—Starting from the observation of an increased protein metabolism in tumors and from Kocher's statement that tumor tissues have an increased content in basic amino-acids, Merzbach, at the suggestion of Fischer-Wasels, investigated whether the anomalies in the protein metabolism of the tumor are reflected also in the composition of the protein bodies of the plasma. After it had been determined that only the content in amido-nitrogen shows deviations, namely, a considerable increase relative to the total nitrogen content, the author restricted himself to the study of the acid-amido-nitrogen; namely, nitrogen that, after twenty hours of hydrolysis with a 20 per cent hydrochloric acid solution, becomes separated from the protein sediment. He realizes that this unified chemical interpretation of the fraction has not yet been exactly proved, but he nevertheless reports his observations on seventeen persons without tumors and twelve patients with malignant tumors. He detected considerable fluctuations in the amido-nitrogen values in patients without tumors as well as in those with tumors, but, with the exception of one patient with carcinoma of the skin, the amido-nitrogen values of patients with malignant tumors were always higher than those without tumors. He found that whenever the amido-nitrogen values exceeded 8 per cent of the total nitrogen content malignant tumors existed.

Hypophyseal Emaciation and Insulin.—Lucke points out that the insulin therapy of emaciation, which was first suggested by Falta, is not successful in all cases of emaciation and that it may have harmful effects. This is especially the case in forms of emaciation developing after severe infectious diseases, such as typhoid and a febrile puerperium. Extreme forms of emaciation may lead to hypophyseal cachexia. The necropsy in these cases may reveal embolic changes in the anterior lobe of the hypophysis, and for this reason the author thinks it advisable to try treatment with hypophyseal extracts, if an involvement of the hypophysis is likely in emaciation. This will not only help in the diagnosis but will also have therapeutic effects. The author reports the clinical history of a woman, aged 40, in whom administration of insulin was attempted to counteract progressive emaciation. Trembling, hot flashes and cold sweats made it necessary to interrupt the insulin therapy, but a great improvement was observed when a preparation of the anterior hypophysis was given. The author thinks that there can be no doubt that the trembling, hot flashes and cold sweats were symptoms of hypoglycemia, and he ascribes this to the low insulin tolerance of patients with hypophyseal emaciation. Further, he points out that the thought that the anterior hypophysis plays a part in the carbohydrate metabolism is borne out by the fact that acromegaly is frequently complicated by disturbances of the sugar metabolism.

Zentralblatt für Gynäkologie, Leipzig

56: 2993-3056 (Dec. 10) 1932

Diagnosis of Anterior Frontal Presentation from External Examination. W. Haupt.—p. 2994.
Bacterial Content of Copper Catgut and Iodized Catgut in Suture Line After Some Time. G. von Linden.—p. 2996.
Experimental Study of Hormones. M. Rodecurt.—p. 3004.
*Prevention of Eclampsia. F. C. Hilgenberg.—p. 3006.
*Psychogenesis and Psychotherapy of Vomiting of Pregnancy. K. Platonow.—p. 3010.
Eclampsia Without Convulsions or Loss of Consciousness. S. Biró.—p. 3016.
Penetrating Injury of Gravid Uterus as Indication for Cesarean Section. G. Warschawer.—p. 3021.
Technic of Cesarean Section. F. Eisenberger.—p. 3024.

Prevention of Eclampsia.—Hilgenberg states that the reduction of incidence of eclampsia in the Marburg clinic is mainly due to the influence of the teachings of Zangemeister. This author in 1921 postulated that eclampsia is the final stage of a morbid process in pregnancy. The first manifestation of the disease is to be seen in the dropsy of a pregnant woman. This is followed by a nephropathy and, still later, by a preeclamptic state leading to eclamptic convulsions as the result of increased intracranial pressure. The state of dropsy is treated by rest, diet and the restriction of fluids. Nephropathies, especially if combined with high blood pressure, are treated by a salt-free diet and limitation of fluid intake to 200 cc. daily. A patient in this stage, entering the clinic with labor pains, is delivered by forceps if the blood pressure is above 150 mm. of mercury. The preeclamptic state, manifested by headache, vomiting, abdominal pain and disturbances of vision, is treated by withdrawal of all nourishment and of fluid for twenty-four hours. The high blood pressure is combated by venesection and, in severe cases, by lumbar puncture. If no improvement takes place with the conservative measures described, emptying of the uterus should be resorted to without much loss of time. Of the 4,117 pregnant women admitted to the clinic between 1925 and 1930 there were 133 cases of threatened eclampsia, an incidence of 3.2 per cent. Of these, eighty-nine presented signs of edema, thirty of nephropathy and fourteen of preeclamptic symptoms. Conservative treatment resulted in an incidence of 36 per cent of eclampsia; active treatment, in only 10 per cent. The author concludes that preeclamptic states with manifest symptoms are best treated radically; that is, by emptying the uterus.

Psychic Origin and Psychotherapy of Emesis Gravidarum.—Platonow, on the basis of his experience in the treatment of cases of emesis and hyperemesis gravidarum, rejects Stekel's hypothesis that the symptom is necessarily of psychogenic origin. Stekel regards it as an anxiety neurosis in the sense of Freud, as a manifestation of a symbolic subconscious fear of the sexual act, or as a manifestation of a concealed repulsion against the child. The author treated sixty-two cases by simple suggestion in the waking state or under hypnosis and obtained a positive result in 80 per cent of the cases. Suggestion by means of a spoken word acted here as a conditioned reflex in the sense of Pavlov. The vomiting symptom is a somatic rather than a psychic manifestation of an auto-intoxication the cause of which has not been determined as yet. Since suggestion, a minor psychotherapeutic measure, is capable of influencing these cases, resort to psychoanalysis is not necessary in the opinion of the author.

Hygiea, Stockholm

94: 881-928 (Nov. 30) 1932

Self-Holding Laparotomy Speculum. S. von Wachenfeldt.—p. 885.
*Cutaneous Changes in Long Continued Local Anaphylaxia. O. Reuterwall.—p. 887.

Cutaneous Changes in Long Continued Local Anaphylaxia.—Reuterwall states that by injecting into the ear of rabbits certain optimal doses of chicken albumin, horse serum and goat serum and by changing the antigens at intervals, a long hyperkeratosis can be maintained, in some animals for eighteen months. The changes produced by these antigens consisted in falling of the hair, hyperkeratosis, hyperpigmentation, crust formation and atrophic skin. The same changes are found clinically and experimentally in the preliminary stages of cancer. In several rabbits, microscopic examination revealed a tendency to papilloma formation. If cancer can be produced by the application of an albumin antigen, the conditions leading to the origin of cancer may be more easily analyzed than when other known cancerigenic means are employed.